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THE AMERICAN BEE JOURNAL

Devoted Exclusively to Bee Culture.

VOL. XIV. CHICAGO, ILLINOIS, JULY, 1878. No. 7.

Contents of this Number.

☞ The Texas Horticultural and Pomological Association hold their fourth annual exhibition on July 17 to 19, at Houston, Texas.

Editor's Table.

☞ Lemonade made with honey, and used freely, is an efficient remedy for dyspepsia.

☞ The unfavorable weather during the early part of June, caused the destruction of many young queens, who were ready for fertilization about that time.

☞ Comb Foundation is being used very generally this season, if we may judge by the quantities called for at this office, amounting to between three and four thousand pounds, already.

☞ A snow storm in Perthshire, Scotland, on June 11th, seems to indicate that the cool weather which prevailed in this locality was not exceptional. If a snow storm in June is disgusting to the human family, it must be doubly so to the tiny bees, who then reasonably expect to revel in the bloom of thousands of fruit trees and millions of flowers!!

☞ We have received a nice lithographic view of the residence and bee-yard of the Hon. H. S. Van Anglen, near Waverly, LaFayette Co., Mo. He calls it "Orchard Place," and we should think it rightly named, from the many trees there exhibited. It is a perfect minature "paradise," where the bees as well as the honorable family ought to be, and no doubt are, as happy as it is averred our primogenitors were in the original "Garden of Eden." It also adorns our museum.

Surplus Boxes 40 Years ago.

So much has been written about the invention and use of surplus boxes for honey, as a very recent contrivance, that a relic of 40 years ago, sent us by friend W. W. Lynch, of Maysville, Ky., will be interesting to our readers. It is a copy of Fishers' *Farmers' Almanac* for 1839, by John Armstrong, A. M., professor of mathematics in Franklin College, O. It is published by Robert Fisher, in Wheeling, Va, On page 32, we find the following on the

MANAGEMENT OF BEES.

The Kennebec, Maine, agricultural Society, at their meeting last autumn, awarded their premium on bees to John Gilmore, who furnished the society with the following statement:—"Having entered my name for premium on honey and a hive for bees, I will inform you how I have managed them for some years past. I keep them in boxes—my boxes are 13 inches square on the outside, and from 6 to 7 inches high, with thin slats across the top about an inch wide, with just room to let the bees pass between them.—For a young swarm I fasten 2 boxes together, with a board on the top, put in the swarm, and when I set them on the bench, put under as many more as I think they will fill—a large early swarm will fill 4 or more. I had some this season that filled 3 in about a fortnight, and then swarmed, and the young swarms have filled 4 boxes.—After my old hives have swarmed once, I usually put under one or more boxes. I prefer this course to letting them swarm again, for second swarms are generally worthless. When the weather becomes cool, if the hive is well filled with honey, the bees will all leave the upper box; it can then be taken on without disturbing the bees in the hive. I usually take from my old hives and early swarms one box, containing from 50 to 54 lbs., and leave enough for the bees to live on during the winter, or I can take a part and return the box if I think the remainder is sufficient for them. If my bees grow lazy after the swarming season is over, and hang out on the hive, which is in consequence of the hive being full, I add more boxes. I had a few swarms which I have taken up otherwise. I have not destroyed any bees. I have taken up on my own farm this season 289 lbs. of good honey in the comb; and I now own, including including those I have taken up, 26 hives.

Where is Gillespie, with his new patent on two-story hives? He ought to have collected a "Royalty" of John Gilmore in 1838, (40 years ago), for using a two-story hive. He put a 6 or 7 inch story over his breeding apartment, which was 13 inches square, and obtained his surplus comb-honey in these "boxes," which had slats or bars across the top, an inch wide, "with just space enough to let the bees pass between them!"—there is a bar-hive, with 1⅛ inches between the bars or slats. These he also "tiered up," too, as some now do. He was a *progressive* bee-keeper, with advanced ideas; and obtained from 50 to 54 lbs. of comb-honey from a hive, good enough to exhibit at an agricultural fair in Maine, in the year 1839! Good enough!

☞ A subscriber in Alabama wishes to know how to be able to tell when honey is adulterated. Almost all extracted that will not granulate is adulterated. The latter is not as sweet—tastes more like starch, and lacks the pungent aroma of the flowers for which the genuine is noted.

☞ We have received the "Dunham Rack" or Case to hold sectional boxes. It is an ingenious contrivance for expanding the limits of a story for hive having cases with close-fitting top bars, thus admitting ease in manipulations. It can be used under a 7 inch cap; or by nailing strips on, can be tiered up as high as wanted, or used with a 3 inch cap. It can be closed with hooks, but Mrs. Dunham says she prefers wires, as they are the cheapest, and can also be used as handles, and in lifting the case they draw all firmly together.

Adulteration of Sweets.

Resolutions Passed at Burlington by the Western Illinois and Eastern Iowa Bee-Keepers' Society, May 8, 1878:

Resolved, That under the name of committee against the adulteration of sweets, a committee of three members be appointed, viz., a President, a Secretary, and a Treasurer.

Resolved, That this committee be instructed to prepare a petition to Congress, and to send a copy of this petition to each of the members of this Convention, with a request to have it signed by the bee-keepers and people at large and returned.

Resolved, That the editors of the bee journals of the United States be asked to insert this petition in their columns, with request to each of their subscribers to take the trouble to have it copied, posted in their postoffice for signature, and sent to the Secretary of said Committee on Adulteration.

Resolved, That said committee be instructed to have an understanding with the Secretaries of all the other bee societies, or bee conventions, through the United States, in order to obtain of such Societies a move in the same direction.

Resolved, That the first expenses incurred by said committee be paid out of the treasury of our Society, and that all other societies be asked to help in the same way.

Mr. Dadant stated that this motion was put before our Society because of the enormous amount of sweets, and especially syrups, sold to the public that were nothing but glucose. He had gone to the best drug store in Keokuk to ask for a sample of glucose. As they did not have any, they told him that they would inquire where it could be found. At his next trip to town they asked him if he had found any glucose any where. He had not. They then told him to go to a grocery anywhereand ask either for New Orleans molasses or golden syrup, or even for maple syrup, and that he would get glucose.

They informed him that he could easily test it by putting a little of it in tea and that it would turn the tea black. He bought 3 samples in different groceries. All turned the tea black. This is on account of the amount of sulphate of iron contained in glucose.

It was thus evident that the people were being poisoned, or at least more or less injured, by wholesale, through this adulteration of inoffensive sweets. This adulteration was also practiced on honey

He remarked that it was just as much the interests of the government to stop this fraud as to stop the counterfeiting of greenbacks; for the one injured the health of the people as much as the other injured their wealth.

It is of course to the interest of bee-keepers to have such laws established, as the large sale of this spurious article in syrups and honey injured the sale of the better and healthier sweets throughout the country.

He stated that this would be only following the example of England, France and other nations, who very justly decided that the liberty of a man ends where it is prejudicial to the welfare of the community. If such laws were passed, making it a criminal offense to offer any sweets under any but their real name, and a few of the adulterators were sued and punished, this would at once stop the sale of any but the real articles, and would permit these wholesome articles to be sold at a sufficiently remunerative price, and it would also be very beneficial to the public health.

C. O. D.—If all were inclined to do just right, and were honest, it would be safe to deal or "dicker" in any convenient way. To send by express, C. O. D., seems to be a very simple and honest way to order goods—but, alas, for human nature, some thoughtlessly order heavy goods in that way that should go by freight, and when they find the amount charged for expressage is so large, they simply refuse to take them Then we have to pay the charges both ways in order to get the goods back and save ourselves from further loss. All can see at once the injustice of the thing—so in future we shall be obliged to refuse to send goods by express C. O. D. Let no one feel hard with us on that account. We would like to do otherwise—but *dare* not.

PREMIUM QUEEN.—To the person forwarding to the Editor of AMERICAN BEE JOURNAL the largest number of new subscribers up to the 1st day of October next, I will present one of my choice Gold-Mine Queens. The Editor to be the judge.

Rome, Ga. A. F. MOON.

Honey Markets.

NEW YORK.

There is no change in the condition of the market during the past month, and prices are still quotable as follows:

Buckwheat Honey—comb	8 to 12c
Strained or extracted	8 to 10c
Clover—in comb	15 to 25c
" extra	8 to 12c

H. K. & F. B. THURBER & CO.

CHICAGO.

HONEY.—The current quotations for good to choice comb, are ranging at 11 to 12c. ₱ lb; common and dark colored lots at 8 to 10c. and choice extracted honey at 8 to 10c.

BEESWAX.—In fair request at 24 to 26c. per lb. for prime choice yellow. No new honey offering yet.

CINCINNATI.

COMB HONEY—In small boxes, 15@20c. Extracted, 1 ₱. jars, in shipping order, per doz., $2.50; per gross, $28.00. 2 ₱. jars, per doz,, $4.50; per gross, $50.00.

C. F. MUTH.

CALIFORNIA.

HONEY.—Our honey crop will be large, and being located far away from a market, we must find one for our large surplus production. We look to England and France for a market, and when our wheat ships move for European ports, so will our honey. Prices will be established. The stock of extracted honey is now pretty liberal. There are small orders in the market, and as prices are now more settled, they probably will be filled this week. Comb honey is less plentiful than extracted, but prices are settling. We quote: Comb honey, white, ₱ ₱., 11@13c.: dark to medium. 8@10c. Extracted, dark, ₱ ₱., 6@7c.; choice. 7¼@8c.

BEESWAX.—Supply and demand correspond, both light; at 25@27½c.

STEARNS & SMITH, 423 Front St., San Francisco, Cal.

Standard of Excellence.

In response to our plea for deciding upon a standard of excellence for Italian bees, we present the following:

Elizabethtown, Indiana.

FRIEND NEWMAN:—Your idea of wanting bee-keepers to agree upon a standard of excellence of the Italian bees suits me. I hope you will keep this thing before the bee-keepers, as I think we should be able to settle this matter during next winter. The trouble is, some prefer dark and some light-colored bees. I have the light-colored bees. I think they are just as good for work as the dark ones. My customers say that my bees are prolific and *very* industrious. I will, at some future time, give you my opinion as to what *pure Italian* bees are; or, at least, what we should all breed for, as to color, markings, &c. I have been offered $1 each, for queens that I pronounced hybrids, but I prefer to kill them. Think there are too many of this kind. JOS. M. BROOKS.

True, friend Brooks, there are too many hybrids sold for Italians now.—But why didn't you give your opinion of what they should be, instead of promising it sometime—that is "too thin." "Now is the time and this is the place." Speak.

Polo, Mich., June 16, 1878.

MR. EDITOR.—As you make a call for a standard of excellence in Italian bees, I will tell you what I think it ought to be: The queen should have a *bright yellow* abdomen with a black point. The workers should have three *bright yellow* bands behind the waist, with a very narrow dark edge. The drones should have 3 very broad, *bright yellow* bands on the back, below the thorax, the sides of abdomen a *bright yellow*, and should be all uniform. If I was on a committee to establish a standard of excellence, I should define them more minutely in some other points. S. K. MARSH.

Well done, friend Marsh, you started well—but *why* say *if* you were on a committee you would define them more minutely in some particulars. You are already on a committee; so define thoroughly—exhaust the subject.—Next.

A man who has sold lots of bees to his neighbors for Italians, called on us a few days ago, and wanted to see ours. After examining our *pure* Italian bees, he said he never saw such before. His were not marked at all like them.—Query:—What kind of bees was he selling for pure Italians? Will any one say that there is no need of agreeing upon a STANDARD by which all may be tried, and thus save imposition?—If there be such a one, let him now speak out.

The Chicago Atomizer.

At the request of several who want a perfect means of spraying combs, bees, &c., for the cure of foul brood, as well as for changing the scent of bees when introducing queens, dividing, making nuclei, &c., we have procured a nice

little thing, called the CHICAGO ATOMIZER, which we can sell at the low price of $1. If sent by mail it will cost 30 cents extra for postage. The above engraving shows its shape and the manner of using it. See page 241 for a description of its use in the cure of foul brood, though we would suggest a trial of the following formula, and its repetition on the sixth day, to prevent a return of the epidemic:

Salicylic Acid	128 grains.
Soda Borax	128 "
Bromo Chloralum	64 "
Pure Rain-Water	16 ounces.

GLASS, WITH CARE.—Friend Chas. Simon, of Swan, Ind., has sent us a surplus honey box, made entirely of glass—6 pieces in all, *i. e.*, 2 pieces of each of the following sizes: 4x4¾; 1¾x4; and 2x4¾. It has four very small pieces of wood, simply to strengthen the joints. It looks well—would show off the honey to perfection, but we should think the great draw back would be the extreme care needed in shipping. It certainly makes the neatest appearance of any box we ever saw.

Excelsior Bee Smoker.

In last month's JOURNAL, on page 176, we noticed a smoker made by Levi Sutliff, Charles City, Iowa. We now give the following illustration showing its shape and general appearance. As friend Sutliff thinks we did not give a correct idea of it in the JOURNAL for June, this cut will certainly correct any

false impression made. In saying it was 3 or 4 times as large as ordinary smokers, we meant, of course, in the operations of the bellows. Its bellows is 4½x8 inches, and has a three-inch motion. The Bingham bellows is 5x6 inches, and has a motion of just one-half, or 1½ inches. The tube of the Bingham is less than 12 inches in length, while this is 20 inches in length. These points gave us the *enlarged* idea of this new-comer.

The tube is 1¾ inches in diameter. The fire-part is 5 inches long. The little tube at the left of the smoker is the cartridge, which may be filled with rags or any other material that will burn, and then put it into the fire-tube, and it is ready for operation. It is advertised in this JOURNAL, and may be had either of Mr. Sutliff or at this office.

☞ The teasel will be in bloom when this JOURNAL gets into the hands of its subscribers, and it will last about four weeks. An acre will support about 10 colonies.

☞ Among our many callers during the past month were Mr. and Mrs. F. F. Collins, of Dallas, Texas, who are spending a few days in the city. They report prospects for honey crop as very favorable in that State, and brought a sample of their extracted honey. We had a very pleasant visit with them.

BEES IN SOUTHERN WISCONSIN.—A correspondent of the Milwaukee *Journal of Commerce*, writing from Milton, Wis., under date of May 31, says:

The men who handle the little insects that "improve each shining hour, and gather honey all the day, from every opening flower," together with the rest of creation, have met with misfortune this season, owing to the cold, damp weather during April and May. There are two men in this town who have quite extensive apiaries, and although their bees wintered well, they have lost a large number since taking them out of winter quarters. One of them, who put one hundred colonies in the cellar last fall has now less than fifty.

Yes; but now the fine weather of the past 10 days has put the bees to work with a will. Our correspondents, nearly all through this JOURNAL, have been telling a sorry tale. But now, in all probability, their faces are wearing a smile of joy—the delightful weather vieing with the merry hum of the bees to make their cup of joy almost to run over. True it is of dame Nature, that

"Behind a frowning Providence
She hides a smiling face."

☞ Many have heretofore sent honey to commission men in this city to sell, and often never receive any returns for it. We know of several such cases now. They sell it, pocket the money, and you can't collect anything of them. There may be good men in that line of business, perhaps many—but the AMERICAN BEE JOURNAL cannot recommend any of them. Should any one desire us to sell their honey for them, we will cheerfully do so, or we will exchange supplies or anything we have for sale, for good honey in prize boxes. We want no other, and we will pay the highest market prices for such honey.

Smoker, Tin Corners, &c.

"I send you, by mail, a smoker and specimen of tin corners, and methods of fastening foundation and frames, which is very easy and quickly done, even by a novice. Care must be taken not to drive the nails so tight as to cut the foundation.

The smoker is made without any solder to melt, and the lower stopper cannot drop out, with fire and all. It has the advantages over the bellows smoker, as both hands can be used while smoking. They can be mailed at 35 cents.

We welcome your valuable paper, which has visited us for 10 years, every month.

The prospects for honey are extra good. Hundreds of boxes are now almost full." F. H. CYRANUS.

The smoker is intended to be held in the mouth. The tube is 2x5 inches, with a cone-shaped end, 2¼ inches, making its total length 7¼ inches. It has perforated tin partition to prevent the fire from issuing from the tube.—For a mouth smoker, it is the best we have ever seen, but we cannot imagine that any one would *prefer* a mouth smoker to one to operate with the hand. We have no such preference—others may, and for such, friend Cyranus has "just the thing."

The tin corners overlap the frame and are nailed to it. They are made of pieces of tin 2x1½ inches long by 1½ wide, which are bent to fit the top bar of the frame running down ⅜ of an inch on either side. These edges projecting ⅜ of an inch over each end of the frame, form the rests to hold it in position, making it very strong, and not allowing them to be fastened down by the bees.

Friend Cyranus' method of fastening foundation into the frames is to rabbet the top-bar out ¼ of an inch from one side to the centre, place the foundation against the piece left, and press a strip of wood, ¼x⅜ of an inch, (being just the size of that rabbeted out,) close to the foundation, nailing through both with small brads. Of course, it cannot get away.

Nearly all the trouble with comb foundation may be accounted for either by its *not* being fastened firmly to the top-bars, or from its not being put into the frame with the strong way of the foundation in a perpendicular position. To ascertain this—hold a piece of foundation up, and look over it; it will be easy to discover small ridges running one way across it. In placing it into the frames, these should always run from top to bottom—never the other way.

In passing through the rollers, while making it, they press together so closely as to make very thin parts between every row of cells. It is impossible not to see this when holding a piece horizontally between the eye and light from a window. Every machine now used makes it thus—but we have a promise of a new machine before next season that will avoid this weakness. Whether it will come up to the promise or not, time will tell—and the JOURNAL will inform its readers. We advise those intending to purchase machines to await the developments of the next few months. Inventive genius is at work, and something beneficial may be the result.

☞ We have received a letter, consisting of questions to be answered, that would, if framed and glazed, be interesting to beholders. It is written on one side of a half sheet of paper, but contains 91 words so inaccurately spelled as to be almost unintelligible.

☞ That Prize we drew at the Burlington Convention came duly to hand a few days ago. It was offered by Hardin Haines, of Fulton Co., Ill. It was to be a Cyprian Queen. She came in good order and was at once introduced into one of the colonies of the BEE JOURNAL apiary. She is a fine looking queen and is laying profusely. We shall report her progeny in our next month's JOURNAL.

☞ The third annual Exhibition of the Iowa Industrial Exposition will open at Des Moines on Sept. 4,—keeping open for one month.

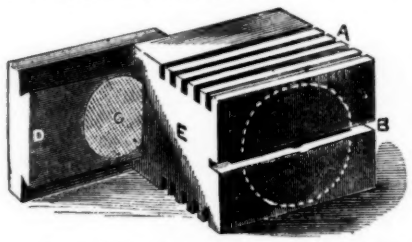
California Honey.

N. Levering writes to the Los Angeles *Star* that parties who are reporting enormous yields of honey there, this season, are doing so for the purpose of running down the price of honey. He adds:

"The honey crop this season in Southern California will doubtless be a little over the average. The amount of honey that will be thrown upon the market will not exceed that of two years ago, as the great mortality among the bees last season has greatly diminished their numbers. 'The harvest is great and the laborers are few.' We would advise bee-keepers to hold for more remunerative prices, where circumstances will permit. The shipments that will be made to Europe this season, and the new uses that are being made of honey must certainly increase the demand. It is no longer a doubt that a good quality of sugar can be made from honey, and it will not be long until the demand in this direction will add much to the pecuniary interest of the apiary. Apiarists have no reason to be discouraged, but keep up a cheerful hum like their little pets, and labor for a higher and broader development of this pleasing and interesting science, when a dawning future will amply reward their toils."

Scovell's Queen Cage.

In our last issue we mentioned friend Scovell's all-wood queen shipping cage. We now present an engraving, and will more fully describe it.

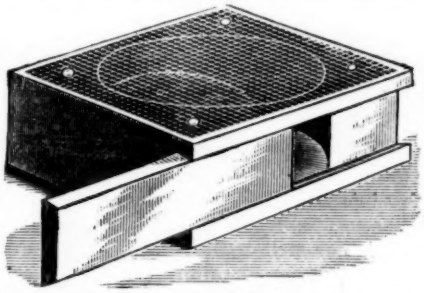


It is 1⅝x1⅝ inches, outside, and stands 1⅝ inches high. *D*, represents the sliding cover; *C*, the sugar provision; *A*, exhibits saw cuts, similar ones being on the opposite side, serving for observation as well as ventilation; *B*, shows a saw cut across the bottom, but we notice that Mr. Scovell has omitted it in those subsequently sent to this office; the dotted lines on the bottom indicates the relative size of the augur hole inside, which comes to within ¼ of an inch of the bottom, and forms the cage.

It is exceedingly neat and strong, and makes a desirable Queen Shipping Cage. They can be obtained at this office in any quantities.

NOVICE'S QUEEN CAGE.

As several have requested us to give a cut of this queen cage, we have pleas-



ure in giving it, in this connection. It is also a very neat and convenient cage. It stands one inch high and is about 2 inches square. It is provisioned with candy before the wire-cloth top is fastened on. This we also keep for sale. See price list on third page of this JOURNAL.

COATING FOR HONEY BARRELS:—M. E. McMaster has sent us a sample of this compound for coating honey barrels, &c. He says he has used it in putting up about 5,000 lbs. of honey last season, with the best results, and considers it far superior to beeswax, and in every way equal to paraffine for the purpose mentioned; while it costs 9 cts. per lb. less than either of the above. It being of an elastic nature, it will not crack or peel off, and it imparts no taste or smell to the honey.—He has not been able to discover any objectionable feature in it, and thinks it as wholesome as beeswax or paraffine. See his advertisement in the JOURNAL.

☞ Judge Andrews, of McKinney, Texas, sent us word about the middle of the month, to look out for a "red-hot epistle" from him on the "purity of the queens," &c., as noted on page 151 of the JOURNAL for May; but so far it has not put in an appearance. Texas is just the place for a red-hot shot to emanate from, but we are far enough North to allow of a little "cooling" before it reaches us. "So mote it be."

☞ The Indiana State Fair takes place at Indianapolis, Sept. 30, 1878.—We have received a copy of the Catalogue, and notice in class 33, a premium of $5 for "the best display of honey;" $3 for "the best 5 pounds of honey in comb;" and $2 for "the best sample of cake, home made." Now let our friends in Indiana make sure of the latter premium for "Honey Cake." Take enough to feed the judges with it, and it will "take 'em," sure. For the comb-honey premium, some white clover honey in prize boxes, nicely glassed, will captivate the judges, if they depend upon "their senses" rather than "rewarding favorites."

☞ A correspondent, after weighing many different sized boxes, has figured out their relative contents, as follows: "A box when filled with newly made comb-honey, well sealed over, will contain 3 lbs. of honey to every 100 cubic inches of space contained in the box.—Thus a two-inch box, 5¼ inches wide, and 6¼ deep—the prize box—outside measure—will contain 66 cubic inches of space, and will consequently hold 2 lbs., box included. This rule holds good with any size of boxes—with the exception that the larger sizes of boxes will contain a trifle in excess of this estimate."

☞ Henry Alley, of Wenham, Mass., has just sent us some very fine Italian queens. They came by mail (letter postage), and were received in excellent order. They are of bright yellow, and appear to be in every way first-class.

"A LAND FLOWING WITH MILK AND HONEY."—The *Intelligencer*, of Belleville, Ontario, goes into ecstacies over the success of our friend, Mr. W. C. Wells, of Thurlow, Ontario. By quoting the text at the head of this article, he must really think that Canada is a modern paradise—

> "A land of promise this:
> Long looked for, by the good."

Well; we don't object, especially when the *Intelligencer* can report anything so good as the following:

"On Friday last he extracted the honey from a hive, and then put it on a platform scale. The hive gained in weight, on Saturday, 25½ lbs.; on Sunday, 30 lbs.; on Monday, 12½ lbs.; and on Tuesday, 5½ lbs. In all, in 4 days, 72½ lb. of honey extracted from one hive. This is actual gain by weight.—Mr. Wells has other colonies which did as well as this one, but this gain was by actual weight. The large quantity of cheese we ship is well known. We are entitled to say this is a 'land flowing with milk and honey.'"

☞ In a private letter, received just as we are going to press, Prof Cook remarks: "I wish you could see my class of 30, working with the bees.—They do it like veterans." Of course we would like to visit the College, and hope to, at some future day, but we are so busy now as to have but little time to devote to nourishment, recreation or sleep. For several months, passers-by have marked the office of the JOURNAL, as they are returning from places of amusement "along towards the midnight hour," by the light on our desk burning so brightly.

We did not intend to say this—but that one class of "three" (not 30) also "work like veterans" at the JOURNAL office apiary. They, like all other students, are enthusiastic on bees; their devotion never tires, never ceases. We invite the Professor to come and see our class. Being in a city, we always have quite a crowd to witness the manipulations with our bees. It is a new thing, here.

Bee-Keeping in Colorado.

Many inquiries have come to hand about bee-keeping in Colorado, and in order to answer them we quote the following from the Pueblo *Chieftain* concerning bee-raising in Colorado:

Will bees thrive in Colorado? is a question that has been asked by a great many persons who were desirous of adding this cheap and wholesome luxury to their places. Nearly everybody will say that bees cannot live here—there are no flowers to speak of, no clover or anything else that produces honey, they say. Now these comments are wrong and not based on facts. There are several very successful apiaries in Fremont county, but as we are only acquainted with two persons owning apiaries, Messrs. Frazier and Tongs, we cannot say how profitable the others, probably a dozen in nnmber, have heretofore been, but judging from the successful workings of these, the net yearly profits must be considerable.

It seems the editor visited both apiaries and remarks as follows:

We found upon examining the hives that the lower apartments were full, and the upper ones two-thirds full, of as nice clear white honey as was ever gathered from white clover. We were somewhat astonished to see such an abundance of honey laid in at that time in the year, when the surrounding country for miles was perfectly void of vegetation, with the exception of buffalo grass and cactus, and as a matter of course, our next question was—where did the honey come from? and was informed by several bee raisers that the much abused cactus (both flat and bush) furnish a large quantity. It is beyond the shadow of a doubt that Colorado, especially the southern portion of the State, possesses some very decided advantages in regard to the winters over the northern and western States for bee-raising, and as honey keeps up (in Pueblo) to the old price of 25 cents per pound, we do not see why it does not pay.

☞ Notwithstanding we have so often referred to the matter—many (thoughtlessly, no doubt,) still write correspondence on the *face* of postal cards. This is not allowed by the P. O. Department—and every such offense against the Postal Laws costs us 5 cents. These amounts are small, but they aggregate several dollars to us each month. Will our friends please be careful not to do so hereafter.

☞ Preserving fruit with extracted honey instead of sugar, is superior in every way. It is not so apt to sour and require a second boiling. Pick the fruit, wash it and drain off the water; then place it in a large kettle or pan and add one-third as much honey as here is fruit, boiling it until the taste of the honey has evaporated.

☞ A correspondent recommends the following for separating honey from wax: "Put honey-comb and all into a tin pail upon a moderately warm stove, adding a tablespoonful of water to each pound of honey. Stir occasionally with a piece of wire until the contents of the pan are in a liquid condition. Do not allow boiling to begin.—Remove the pan from the fire and set it aside to cool. The cake of wax, to which all impurities will adhere, may then be carefully lifted off with a knife."

☞ Friend Doolittle's fancy crate of honey, to which was awarded the Gold Medal in New York, last fall, has been exhibited, as such, by Mr. W. M. Hoge, in London, Liverpool, and other cities of Great Britain, as well as the Paris Exposition.

☞ The large podded milk-weed almost invariably causes the death of every bee alighting upon it. The bee either adheres to the plant, or else bears away a small scale sticking to its feet, and cripples itself fatally in attempting to remove the annoyance.

FROG-EATING BEES.—Now "Froggy" stands at the bar on trial for various thefts and robberies. My friends, the bees have a serious charge to make against him. One evening in July last he steathily crept up a slanting board placed against a beehive, and with his trap-like jaws caught the bees leaving and entering the hive. Why the bees did not charge him at the point of the bayonet I do not know, except it was his slimy coat of mail, on which they could get no foothold. Anyhow, the pet "Froggy" is not as innocent as he looks.—*Land and Water.*

RATS AND MICE.—Several correspondents write to announce the complete extirpation of rats and mice from their cow-stalls and piggeries since the adoption of this simple plan: A mixture of two parts of well-bruised common squills and three parts of finely-chopped bacon is made into a stiff mass, with as much meal as may be required, and then made into small cakes and baked; these are put down for the rats to eat.—*English Standard.*

Foreign Notes,

GLEANED BY FRANK BENTON.

HERR DENNLER, of the *Bienen-Zuechter*, has observed that his bees prefer the blossoms of wild grape vines to those of the linden, and he recommends the former very highly for cultivation in shady, out-of-the way places, old walls, north side of buildings, etc.

L'Apiculteur says of the apicultural show at the Exposition: "In visiting the pavilion containing the French apicultural products, we fear that more than one will say, when he learns what this or that cost the contributor and exhibitor: 'One should be able to produce a better article for that price; there should be a place more appropriate to the article, and to exhibit implements—otherwise than on tables—classed as far as possible in accordance with their order and use; they ought, as well, to be able to attach a different card in order to properly present some products.'"

THE WAX TREE.—"The wax-tree grows upon the Andes in South America, reaches a height of 150 feet, and is consequently one of the finest trees of the tropics. Its trunk, which at the base reaches a diameter of about two feet, is covered its whole length with wax, which can be scaled off. The scales are then boiled in water and the wax floats, without melting; it only becomes softer and the impurities settle. From this mass, with which a quantity of soap is often mixed to make it brittle again, they make candles. The wax obtained in this manner is yellow, light, transparent, nearly like resin; it melts at a temperature somewhat stronger than that of boiling water. When rubbed it becomes very electric, and gives out a very strong smell in burning."

CURE OF RHEUMATISM.—*Der Deutsche Bienenfreund* contains the following article by Herrn Schneider, Principle of a Royal Academy in Silesia: "Some six years ago my wife suffered from rheumatism in the right arm, no physician being able to help her. During a half year, in consequence of darting pains, the poor woman could not secure a night's sleep. The afflicted arm was nearly crippled; she could not attend to the household labors, and at last could no longer dress herself alone. I happened to recollect having read somewhere of the cure by means of bee-stings, of a farmer who was troubled severely with rheumatism. The pain which my wife must constantly endure could not be increased by a few bee stings, so I permitted the afflicted arm to be stung by three bees; and in order that the poison sacs might be completely emptied, I held the bees to the arm for some time. The result of this application was surprising. The first night my wife could, for the first time in six months, sleep well; the darting pain was gone. The next day the arm was swollen very thick, yet this rapidly decreased; the rheumatism had wholly left, and has not reappeared. I could mention a series of such cases in which the severest rheumatic pains have been successfully treated by the use of bee-stings, but it would only be a repetition, hence I will only add that the effect of the bee-stings always appears in the shortest space of time, and that this means has never been used without producing the most favorable results."

Notes and Queries.

Paoli, Ind., June 7, 1878.

"A neighbor of mine had a swarm of bees come out on Sunday, and on Tuesday, the second came. My second swarms never come under 8 days. I would like to know what made the 2 swarms come so close together. Bees have done well here in Southern Indiana, this spring; but the weather is so dry now that it is making clover honey short. My best wishes for the AMERICAN BEE JOURNAL."

B. M. LINGLE.

[Unfavorable weather may have delayed the first swarm from issuing till the oldest queen was ready to emerge from the cell.—In such a case she might, another queen being nearly ready to leave the cell, accompanying an after-swarm in two or three days.—ED.]

Delhi, Ill., June 1, 1878.

"Please give the name of the enclosed plant. It seems to be a species of clover."

H. D. EDWARDS.

[Prof. Beal, of the Michigan Agricultural College, answers as follows: "*Trifoluim reflexum*, (Buffalo clover). I should like a package of seeds."—A. J. COOK.]

Hart, Mich., June 5, 1878.

1. "The 3rd inst. I was engaged looking up a queen in a last year's after swarm—did not find her the first time going through the hive—was just going to renew my search when I had to leave them and look to a swarm which was just issuing. After taking care of them, I returned to my search for *the* queen. Went through the hive again to the middle frame, when I noticed on the lower front corner of it, a knot of bees which I was certain contained the queen. I took it up and released her on the middle of the frame, thinking perhaps she would be safe there, but they immediately imprisoned her. I went for a cage to put her in, but when I had released her again, she was a corpse. The colony is a medium sized one. How shall I account for their conduct?

2. I also have 2 hives, with about a pint of bees in each. One of them contains a queen 2 years old, the other is 1 year old.—I have been nursing them, thinking perhaps they would build up when honey began flowing more freely, but on looking at them to-day, I find none of the larvæ fully developed, and many of the cells contain 2 and 3

eggs. Are these probably drone laying queens?

3. Are drones admitted to other hives than their home?

Bees in this locality are doing nicely on white clover and raspberries. Swarms are issuing nearly every day."

E. S. HOUGHTALING.

[1. The bees, evidently, were dissatisfied with the queen, and were determined to supersede her.

2. The queens are disabled, or drone layers. You should either give them a prolific queen, a queen cell, or double them up with some other colony.

3. Drones, having no propensity for robbing, have no desire to enter other hives than their own.—ED.]

Council Grove, Kansas, June 3, 1878.

"In the hive recommended by Prof. Cook, in his *Manual*, there is no provision for ventilation, in case the entrance is entirely closed. How would it do to have a hole, 4 to 6 inches square, through the bottom board, the hole to be covered with wire screen and open at all times? Will not bees do better for such ventilation? Please answer through the JOURNAL."

D. P. NORTON.

[If the hives are shaded they need no ventilation more than spoken of in my book. When cool, they ought to have only one opening, and that small. As the weather gets hot, push the hive clear forward, so as to give entrance clear across. That is enough. Of course, they must be given plenty of room inside. I *would never have more than one entrance.* I have experimented much, and find more worse than useless. See new book on this subject.—A. J. COOK.]

Otley, Iowa, April 30, 1878.

"Father and I put 81 colonies of bees into the cellar, about Nov. 17. Took them out about March 13. Wintered without loss.—Seem to be in fine condition now, with the exception of 2 or 3. Apple and cherry bloom very good. Think prospects are good for an excellent honey harvest.—Everything about a month earlier than last year. I like the Bingham smoker very much. What is the best method of straining extracted honey?" W. C. NUTT.

[This question is answered so concisely in Prof. Cook's new work that we will insert it here. Before doing so, let us remark that every beginner, or person of limited experience in bee-keeping, would find it greatly to their advantage to get a copy of this work. They will there readily find, by the aid of copious indexes, any subject they may want information upon.—It will save them much perplexity, and often many times the price of the book, by having it at hand just the minute when the information is desired. In the "Manual of the Apiary," page 198, Prof. Cook remarks: "To render the honey free from small pieces of comb, or other impurities, it should either be passed through a cloth or wire sieve—I purposely refrain from the use of the word strainer, as we should neither use the word strained, nor allow it to be used, in connection with extracted honey—or else draw it off into a barrel, with a faucet or molasses gate near the lower end, and after all particles of solid matter have risen to the top, draw off the clear honey from the bottom. In case of very thick honey, this method is not so satisfactory as the first. I hardly need say that honey, when heated, is thinner, and will of course pass more readily through common toweling or wire-cloth."—ED.]

Indianapolis, Ind., May 22, 1878.

"My bees are doing finely. They wintered well. I have a bee house that I think good to winter as well as to summer in.—They are now working in boxes. Is there Comb Honey Racks to suit hives, 12x13 inches, with frames 12x12, and what will such cost? Alsike is just coming into bloom. I have about 2 acres. It looks well." W. A. SCHOFIELD.

[Yes, such is described and illustrated on the third page of the cover of this JOURNAL. It would contain two rows of boxes, 12 in all. A sample, all complete with outside boxes glassed, and tin separators, costs a dollar. By the quantity they would come cheaper than that.—ED.]

Putnam Co., Ill., June 14, 1878.

"DEAR EDITOR:—My bees made a little fortune last year. My 200 colonies produced 1,200 4 lb. boxes of honey. I sold 30 colonies, leaving 170 and 4 swarms, up to June 13. I do not expect many swarms this season. The hives were very full of bees and honey early in May. Since then they have done poorly; now there is a little white clover. The drone comb foundation that J. Roberts and myself got of you is of excellent quality. Bees are doing well with it. Please answer the following questions:

1. Why are drones sometimes produced in worker comb?

2. Two of my queens produced worker bees in March and April. In May they produced drones in worker comb; then I killed them.

3. Is there three sizes of comb foundation manufactured,—worker, drone, and for honey?

4. I would like a pure Cyprus queen, but do not know how they should look to be genuine. Can some one give a description?" OTTO HALBEIB.

[1. When there are no drone cells, queens will sometimes lay in worker-cells, and if

compelled to do so, will, reluctantly, lay worker eggs in drone cells.

2. They were for some cause, no doubt, unable to produce workers any longer, and hence the drones in the worker comb.

3. Two sizes of cells only are produced—worker and drone. The latter is preferred for surplus, by some.

You will find such description on page 237 of this JOURNAL.—ED.]

Montgomery Co., Texas.

"I inclose a branch with flowers of the wild peach. It is an evergreen; grows abundantly on the margin of creeks and river bottoms. Bees crowd it heavily; I think it very valuable for bees.

"I also send you a specimen of a plant abundant here. It comes up in the fall and grows slowly through winter, not leaving the ground (like white clover,) covering the ground by the first of March; holds dew on the under side all day. In the sunshine the bees work on it all day. I have seen no blossoms yet. I never noticed it before this year. The winter having been very warm, many of my bees ate up their winter supply and perished during January and February. My summer and fall pasturage is not good. The spring, till June 20th, is very fine. It closes with the linn. We have very many fine localities for bees in this State. Three-fourths of south-eastern Texas is woodland, and all creeks and small streams abound with bee pasturage. There are a great many wild bees in the timber and bee hunting is frequent in the fall. Some bring in 2 or 3 barrels of honey. THOS. D. LEONARD.

[Prof. Beal says that the tree with evergreen leaf is *Prunus Caroliniana* (cherry laurel). The leaves are said to poison cattle which eat them. The small herb he does not know; he would like to see some in flower.—ED.]

Boundary City, Ind., May 31, 1878.

"I raised 7 queens from the imported queen I got of you last fall. They are not as bright a yellow as the mother. I raised one from a home-bred queen that is of a brighter yellow than either of those from the imported mother. Those from the imported mother have two black spots on their backs by the yellow rings—the other one has not. Which are the purest, those with or without the black spots?"

D. K. KNOLL.

[Imported queens are procured, usually, to infuse new blood into the apiary, and not on account of their personal beauty. Their American progeny sometimes vary, being either lighter or darker perhaps oftener than of the same color as the mother.—Their progeny—the workers—forming the test of purity. Of these you do not speak.—The black divisions between the yellow bands (which we suppose you mean by the spots by the yellow rings) are sometimes more pronounced, but usually less distinct,—they have nothing to do with purity in queens.—ED.]

Eminence, Ky., June 17, 1878.

"Is it practicable to feed extracted honey to bees during the dry summer weather when there is little or no honey to be had from flowers and have the bees make section comb honey of it with profit, and how to do so? The theory looks plausible, but I would like to know if it has been demonstrated, and to what extent it will pay. It seems to me that it would stimulate brood-raising and keep stocks strong and ready to gather large stores from buckwheat and other fall pasturage. If the extracted honey can be changed to section comb honey it would be more salable.

2. I want some arrangement in the way of a comb-rack that can be worked two stories or one, as circumstances may require. On many of my hives the sections are nearly all full but the honey is not ripened sufficiently to seal over, and the bees want to swarm because of not having room. If I had racks that would suit to just slip one under the almost completed sections, full of empty ones, I think the bees would be happy, not swarm, and more clover honey would be secured. I intend to have some such another season. E. DRANE.

[1. Will those who have had experience in feeding honey to bees for the purpose of getting them to store it in surplus boxes please report the result of their experiments?

2. A Rack to admit of "tiering up," is described on page 240 of this JOURNAL.—ED.]

Noblesville, Ind., May 8, 1878.

The queen of one of my best colonies has raised one lot of brood but will not lay any more eggs, and the bees will not work; they have some honey. Why is it, and what is the remedy?

With a fair season how many stands ought I make from three good colonies and get 100 lbs. honey? L. M. WAINWRIGHT.

[Of course the queen is disabled and should be superseded. As the colony has no brood, the bees cannot raise a queen unless you give them a frame of brood or a queen-cell. If you have no surplus queens you should give them a queen-cell or brood at once. One swarm from each colony is sufficient if you want 100 lbs. of honey. So much depends upon the season that no one can give a definite rule.—ED.]

Benton Co., Miss., June 10, 1878.

"I am troubled by the moth-worm; how can I get rid of them?" L. Z. D.

[Strong Italian colonies are not troubled with moths. Keep your colonies strong, and they will never become mere nurseries for worms.—ED.]

Conventions.

North-Western Illinois Convention.

The North-Western Illinois Bee-keepers' Association met at Rock City, May 7, 1878, President H. W. Lee in the chair. The minutes of last meeting were read and approved, and 6 new names were added to the roll. A letter from the Secretary of the Western Illinois Bee-keepers' Society, asking us to change the name of our society, was read, and laid on the table without discussion. The Secretary handed in his resignation, which was accepted, and Jas. E. Fehr was elected his successor.

It was decided by a unanimous vote not to change the name of our Association.

DISCUSSIONS—UNITING COLONIES.

Mr. Hodgkins scented with peppermint.

Mr. Holly united in cool weather, by lifting frames and bees out of one hive, and putting them into the other hive; and they were always accepted.

Mr. Fehr unites the same way; prepares them in the middle of the day by taking half of the comb out of both hives, moving the combs in one hive to one side of the hive, and in the other hive to the middle; then in the evening, lifts combs with bees in the latter and sets in the former. Sometimes takes one queen away and sometimes not, and the bees never quarreled.

Mr. Lee thought they might not kill the one queen and keep both. He had several cases of 2 queens in 1 hive.

Mr. Conklin has frequently united by putting one hive above the other, when putting them in the cellar, taking off the bottom board of the upper one.

WHY BEES DESERT THEIR HIVES IN SPRING.

Mr. Holly thinks it is for the want of pollen. He said there must be one universal cause, or why did they swarm out one spring, about 8 years ago, all over the country, as reported in the journals? He had seen them so desert their hives in June, in very dry weather, when there was no honey or pollen. He had not seen any desert their hives when they had pollen.

Mr. Hodgkins thought it was dampness. Had seen a neighbor's bees swarm out, when, upon examining the hives, he found the combs and hive wet and damp.

Mr. Lee had seen them desert the hives with plenty of honey and pollen; thought starvation would drive them out; thinks the black bees desert their hives more than the Italians.

CAN COMBS BE USED SUCCESSFULLY AFTER BEING MOULDY?

Mr. Holly had lost many bees in wintering, when he had box hives. Combs would be mouldy. He would cut out all mouldy comb.

WHICH IS MOST PROFITABLE, EXTRACTED OR COMB HONEY?

Mr. Holly thought people were getting to know the pure from the adulterated honey. This will increase consumption.

Mr. Conklin had created a demand for extracted honey, by leaving samples at the grocery stores, and allowing every one to taste it.

WHAT TIME IS MOST APPROPRIATE TO PUT BEES INTO WINTER QUARTERS?

Mr. Hodgkins put his into winter quarters 6 weeks before cold weather. He would make sure of housing them before cold weather. They always wintered well when put in early.

Mr. Lee would put them in during the first part of November, if he felt certain they would stand the long confinement.—He always gave them upper ventilation.

WHAT WERE THE RESULTS OF WINTERING DURING THE PAST SEASON?

Mr. Williams lost more bees during the last winter than ever before. He wintered in the cellar. They got too warm and smothered; consequently, his bees are weak.

Mr. Lee lost 1 colony, out of 201 colonies.

Mr. Hull lost 1, out of 59.

Mr. Holly wintered 62, lost one.

Mr. Conklin had 39 and lost none.

Mr. Hodgkins wintered 40 colonies and 4 nuclei, and lost none.

Mr. Stewart wintered 83 without loss.

Mr. Adams had 11, and lost none.

Mr. Keister lost 9, out of 73.

Mr. Fehr had 45, and lost none. Some were very weak, and he united them, leaving but 39.

R. M. Milliken, Mr. Stewart and Mr. Keister were appointed a committee to revise the Constitution.

RESOLUTIONS.

The following motions were carried unanimously:

Resolved, That we appreciate and recommend the invention of H. W. Conklin, for fastening comb foundation into brood frames, by 2 saw kerfs; one horizontal, the other diagonal, same as described in the AMERICAN BEE JOURNAL for May, page 142.

Resolved, That we extend our warmest thanks to Mr. and Mrs. Jonathan Stewart for their courtesy and hospitality so generously tendered to us.

Resolved, That our next annual meeting be held at Shirland, on the 3d Tuesday in December, 1878.

Resolved. That we adjourn to meet on the 1st Tuesday in September, at the residence of R. M. Milliken, Dakota, Stephenson Co., Ill.

JAS. E. FEHR, *Sec'y*.

Los Angeles (Cal.) Convention.

A meeting of the bee-keepers of Los Angeles County was held on May 18, 1878.—A. J. Davidson in the chair. The minutes of last meeting were read and approved.

The Committee on Packages presented a report, and exhibited sample barrels, made at Anaheim, 15 and 20 gallons (holding from 200 to 250 lbs.), substantially made with iron hoops, and the ends of the barrels painted, costing respectfully $1.50 and $1.75; cans, square with screw top, 10 lbs. per 100, $16; 5 lbs. per 100, $13 and $12.50; round, 10 lbs. per 100, $13; round, 5 lbs. per 100, $10; round, 2 lbs. per 100, $6. The latter cans are without screw top, and are soldered. The additional cost of waxing the barrels will be from 20 to 25 cts.

After much discussion pro and con, Wm. Muth Rasmussen offered the following, which was adopted:

Resolved, That the bee-keepers be requested to adopt the barrels this season.

J. E. Pleasants stated that the bee-keepers of the Anaheim district had adopted them this season, and that freights were less on honey in barrels than in cans.

A. J. Davidson stated that he had taken 5,000 lbs. of honey. It was also stated that the firm of Lincoln & Kimble, and others, had taken much more.

Wm. Muth Rasmussen said he had tried the experiment of breaking the caps of the honey cells in the brood chamber, to cause the bees to build comb more rapidly in the upper chamber, and found it worked well, and that the bees would carry the honey above.

E. W. Sinclair exhibited a specimen of honey, made from boll-sage, which was of most exquisite flavor, and so transparent that the honey was of little or no obstruction in reading a paper through the bottle.

Mr. Chapman spoke in the most commendable terms of comb foundation. He had used $15 worth this season, and wanted as much more.

As the working season is now upon us, another meeting will not likely be held until late in the season. The subject of a display at the coming Horticultural Society was taken up and discussed. Some objections were made in consequence of the Society having packed the premiums at the last fair, that too many drones in the hive consumed the honey. It was agreed that a fair deal on the part of the Horticultural Society, at the next fair, would insure a good display in the agricultural department. No decisive action was taken, and, on motion, the meeting adjourned, to meet on the third Saturday in August, to convene in the hall over the Grange Store, at 1 p. m.

N. LEVERING, *Sec'y.*

Ventilation.

Read before the N.E. Bee-keepers' Association at Rome, N. Y., Feb. 1876, and published by request of the Society.

Industry, skill, and economy, will secure a competence in almost any legitimate pursuit. Without these three essentials, business becomes a mere lottery, with many more blanks than prizes; and although the prize of success may occasionally be obtained, it adds nothing to the credit of the obtainer.

Formerly, bee-keeping was supposed to be a highly favored pursuit, success depending not upon the amount of labor and skill employed, but upon the possession of a mysterious something, called *luck*.—Happily, wiser counsels have prevailed until, at the present time, our leading apiarists are united in the assertion "That the greatest enemy of the bee is the ignorance of man." Nowhere do we see the truth of this statement more conspicuously shown than in that much discussed branch of our business, wintering; and were we, to-day, to examine in detail the many theories advanced, and the equally numerous practices founded upon them, we should be compelled to accept the conclusion that luck more often than wit is still to have the credit of success.

As a discussion of the whole subject of wintering would require too much time and space, I will confine my thoughts principally to ventilation while in winter quarters; (a subject upon which no two authorities agree), and in order to be consistent, I shall have to disagree, to a very large extent, with the many that have preceded me. At the outset, we shall have to satisfy all that bees require the accession of fresh air to maintain life and health, a proposition that common sense would answer by an emphatic *yes*, but to which many bee-keepers give as equally an emphatic *no*, and bring forward many illustrations to prove the truthfulness of their theory.

Gen. Adair, in an elaborate paper on ventilation, mentions having had a honey box, the air-space of which was half filled with living bees. After proving, to his own satisfaction that it was air-tight, by blowing into it, as a cooper does into a barrel, he covered the entrance with waxed paper and set it away for a couple of days. He then examined it and found that the bees did not seem in the least inconvenienced by their confinement.

Prof. Cook, of the Michigan Agricultural College, reports that one of his most prosperous colonies, in the spring, was one that had the entrance to the hive completely filled with ice for nearly the entire winter. But more important than either of these experiments is the well known fact that bees have been buried for months under ground, with no provision for ventilation, and with the surface of the ground frozen solid during the whole time. Are any more facts needed to prove that ventilation is unnecessary? We might subscribe to this, did we not know that bees require food at all times, and that from 1 to 3 lbs. of honey per month is consumed by each colony, while in winter quarters. Chemistry tells us that the consumption of this amount of food requires the introduction of a larger amount of atmospheric air. It also tells us that the combustion of 3 lbs. of honey, within the body of the bee, produces 2¼ lbs. of watery vapor, and nearly 24 cubic ft, of carbonic acid gas. The free atmosphere contains but 3 or 4 parts of carbonic acid in ten thousand, and the best European authorities are united in asserting that for the respiration of man, it should never contain more than ten parts in ten thousand. Marker and Schultze, of Germany, in their researches on the natural ventilation of stables, have found that for domestic animals the proportion may safely run three times as high, or 30 parts in 10,000.

On the supposition that bees need an atmosphere no more pure than this, we find the consumption of 3 lbs. of honey requires the passage through the hive of not less than 8,000 cubic ft. of air. As the brood department of our hives usually contains less than a cubic foot of free air; this necessitates the complete removal of this air, at least, 8,000 times.

These figures, undoubtedly, seem large, but if I should say that 200 colonies of bees require as much air as their owner, you would not be surprised, but think the estimate quite small. Now, Gen. Morin, of Paris, (see Smithsonian Reports,) has furnished us the best of proof, (experimental, not theoretical), that in close apartments, in order to keep the atmosphere around him sufficiently pure, man requires over 2,100 cubic feet of air per hour, a result subscribed to by the best authorities in Europe. This is largely in excess of the amount required by 200 colonies of bees, supposing each to consume 1½ lbs. of honey per month.

But where did the bees in close confinement get their supply of air? There is no proof given that the receptacles were air-tight. Adair's test only proves that the outlet was immeasureably smaller than the inlet; and it is not claimed that Prof. Cook's hive had no crevices through which a limited supply of air might not enter. I have had the entrances of several hives closed for weeks at a time, without serious inconvenience to the inmates, but I know the connections were not air tight. Even if they had been, the bees would have received a considerable quantity of air through the walls of the hive.

It is a well established fact that atmospheric air freely penetrates the tissues of all plants. Corewinder found that a single colza plant, in 12 hours, decomposed 2 qts. of carbolic acid gas. Bousingault found that 12 square feet of oleander leaves decomposed about the same quantity.—These results prove that a very large quantity of air must have coursed through the plant. Some idea of the size of the "breathing pores," or *stomata* may be formed, when it is known that 100,000 of these openings may be counted upon an average sized apple leaf: Although the leaves are much more pervious than the stems, air in various degrees of purity may be found in all parts of the plant. If green wood allows the free passage of air, certainly dry wood will be more pervious. We all know how freely wood imbibes water, and it is safe to say that air will go wherever water can, for it is 770 times lighter. On the supposition that one-half as much air passes through an unpainted inch board as through a limestone wall, well laid in morter, (not an extravagant supposition, I think you will say), I find by computation, that with the size of hive we use, so long as the hive walls remain dry, quite a large per centage of the air required by the bees in winter will enter this way. In proportion as the wood hive becomes saturated with water is the passage of air impeded, a fact of much importance in wintering.

How about the bees buried? Facts are on record, showing that men have been buried for days at a time and were not suffocated. Certainly, when men can live, bees ought to, as they require so much less air. But the men were not buried under frozen ground, you say. Von Rettenkoffer, than whom there is no better authority living, says that he believes frozen soil to be not much less impervious to air than the same soil unfrozen. I have not space to give his reasons, and will only say that he seems to have the best of the argument. He says, in regard to the free passage of air through the ground, "I know cases where persons were poisoned and killed by gas, which had to travel 20 feet under the street, and then through the foundations, cellar, vaults and flooring of the ground floor rooms."

In wintering bees underground, we need not have so much fear that the quantity of air will fall short, as that it will be deficient in quality. A year ago, in reading Prof. Johnson's admirable treatise on "How Crops Feed," I learned of the impurity of the soil air. It usually contains all the moisture it will hold, and from 10 to 390 times as much carbolic acid gas as the free atmosphere. In sandy soil the air is the purest.

To keep the soil air out of our bee cellars, last fall, we carefully coated the sides and bottom with hydraulic cement, and I find that it makes them much dryer and better.

The material of which your bee house is built will influence the amount of artificial ventilation needed. In order to give you an idea of the extent of natural ventilation through the walls of buildings, I cannot do better than again quote Rettenkoffer:—

"For every square yard of wall surface, at 9⅛° fahr. difference of temperature, the spontaneous ventilation, or passage of air through the wall, amounts per hour to

4.7	cubit feet,	with	walls of	sandstone,
6.5	"	"	"	quarried limestone,
7.9	"	"	"	brick,
14.4	"	"	"	mud."

We prefer to build our wintering houses of earth. You would at first conclude that sandstone walls would be more porous than limestone, but sandstone is a smoother stone and does not require so much mortar. It is the mortar that admits the larger part of the air. There has always been a serious disagreement between theoretical and practical ventilation, until a consideration of the extent of natural ventilation reconciled the difference. Many interesting experiments are on record. With suitable apparatus, candles are extinguished by air blown from the mouth through solid brick walls, a foot in thickness.

Another mistake still current in some of our text books on ventilation is the statement that impure air, being heavier than pure, falls to the bottom of a room and remains there, unless provision is made for its outlet at that point. These authors are ignorant of the law of the diffusion of gases. Gases intermingle perfectly, no matter what the variation in density. Usually there is not much difference in the purity of the atmosphere in the various parts of a room, unless the changes are quite rapid.

A consideration of the moisture of the air, as well as of the practical appliances for ventilation must be deferred for the present. S. H. ELWOOD.

Starkville, N. Y., Feb. 1, 1876.

MR. EDITOR:—The publication of this essay has been postponed with the expectation of reviewing and correcting it.—Further changes will be made in our ventilating apparatus, and I prefer to test thoroughly before recommending. S. H. E.

June 1, 1878.

Lancaster Co. (Pa.) Association.

The Association met on May 13, at Lancaster. The following members being present: Peter S. Reist, Litiz, President; John Huber, Treasurer, Pepuea; Daniel Krider, West Lampeter; I. G. Martin, Earl; Ellis Hershey, Paradise; J. F. Hershey, Mount Joy; J. B. Eshleman, Ephrata; J. G. Rush, Pequea; John H. Mellinger, Strasburg; E. H. Mellinger, Strasburg.

On motion, F. R. Diffenderffer was elected temporary Secretary.

REPORTS.

Mr. E. Hershey said, last fall he disposed of all his bees but 15 colonies, which came through the winter all right. Had no swarms so far.

Mr. Rush reported that out of 7 colonies he had lost 1; 1 colony has swarmed twice, and both are doing well. The prospects for a honey crop are good.

Mr. Mellinger reported that all his colonies came through the winter very well; has had 5 new swarms. One colony has sent out 3 swarms, and another will send out 2.

Mr. Martin reported that he had wintered 16 colonies; he packed the hives in chaff, and they came through well. He had no swarms yet.

E. Hershey went into winter quarters with 62 colonies. He built a bee house, and brought all his colonies through. So far, 9 have swarmed. Some of his neighbors have new colonies. The season has, up to this time, been unfavorable to the production of honey.

Mr. Eshleman read a letter from W. J. Davis, of Warren county, who was expected to be present. He had wintered 153 colonies and lost 9. The letter further stated that the bees were hard at work, and the prospects for a large honey crop were very good. The speaker stated, in reference to his own bees, that he had wintered 22 colonies, and all had come out. There was no trouble in keeping bees the past winter as it was so mild.

Mr. J. F. Hershey stated that W. B. Detweiler, a neighbor of his, had put up 72 colonies last fall, and lost none. Mr. Myers' bees also came out well, but none have swarmed.

President Reist said that he started with 4 colonies, which gradually increased to 50 or 60. These he disposed of by selling or by placing them with neighbors. Of those put out in shares, all the colonies are doing well. One colony swarmed 3 times. He wintered on summer stands. Bees, everywhere, are going well, and gathering honey rapidly. He uses the Langstroth hive.

QUESTIONS DISCUSSED.

Mr. Hershey asked in what condition a colony should be to be divided, and at what time it ehould be done. On this question he gave his own views. He thought the hive ought to be strong in bees and honey. If the colony is divided in the honey season, the old colony does not get strong enough to gather a stock of honey large enough to enable them to pass the winter; but if you wait until the hives are full, they can be divided safely. About 3 weeks from the present time they should be divided. The young swarm should have 3 weeks to gather its winter stock of honey. He preferred artificial to natural swarming. Has lost a colony which he did not attribute to artificial swarming but to cold weather. After the 15th of June it is unsafe to divide a colony; however, this season, the limit should be placed about 2 weeks before that time, as the season is so forward.

Mr. Rush would rather depend on a natural swarm than upon Mr. Hershy's plan; he saw no advantage in that method.

Mr. Martin used a good deal of artificial comb foundation, and liked it very much.—He has found as many bees to hatch out of them as when they are not used, although it is stated that the product is much less.

Mr. Eshleman's question was, "will a natural swarn accept immediately a strange queen without caging?"

Mr. Hershey said if an artificial swarm was divided it would not accept a strange queen; what a natural swarm would do he did not know.

Mr. Martin had no experience in the matter, but had read that the strange queen would be accepted.

Mr. Eshleman said his reason for putting the question was to ascertain whether a colony could in that way be Italianized.

"Will it pay to feed between apple bloom and white clover blossoms?" was asked by J. F. Hershey.

Mr. Martin thought that if they were fed until clover comes in bloom, they could then go to work in earnest.

Mr. Hershey was of the same opinion.—But if the colony had an abundance of old honey he would let them consume that; then there is no advantage in feeding them. He fed them through a tin trough, about 1 inch wide, which is filled through a tube from the outside. The best thing to feed to them is honey; the next best, sugar and water, in equal proportion. Best brown sugar should be used. Honey stimulated the bees to breed more than sugar did.

President Reist asked whether moths can get into hives without their laying eggs there.

J. F. Hershey said that moths do not lay eggs in the hives. They lay them on the outside, and the bees carry them in themselves. Moths will go into a weak colony, but not into a strong one.

Mr. Reist said he had heard that moths would not go into strong hives; but it was not true. They would go into any hive.

Mr. Eshleman had discovered that the moth would, if it could, deposit its eggs under the honey board, and the worm would then work its way into the hive.

Mr. Mulligan said you could not keep worms out of the comb. He had placed some in an exposed place on one of the coldest days in winter, but worms come out nevertheless.

J. F. Hershey proposed the question, "How soon should the second swarm appear after the first?" and it was briefly discussed. He thought it should be 9 days after, as did other members, but Mr. Mulligan said that under certain conditions it could appear 7 days after.

Mr. Diffenderffer, when the question of the time of next meeting arose, said he hoped that it would be just in the fruit season, so that they could discuss the question, "Do bees destroy fruit?"

Mr. Eshleman said he did not believe a bee could cut the skin of a grape, though they might cut through paper. Grape skin is almost as tough as leather.

Mr. Rush asked if any one could propose a plan by which it could be tested; and it was proposed to put molasses on a bunch of grapes and cut the skin of one grape. If the bee sucks the inside of the cut grape out, and does not touch the others, it is a reasonably sure sign that they cannot pierce the skin.

Mr. Eshleman said he would put a bunch of grapes at the opening of a hive, and then the bees could not get out without cutting the skin of the grape. If this did not test the matter, he did not know what would.

The Society then adjourned to meet the 2nd Monday in August.

J. F. HERSHEY, *Vice President.*

Chips from Sweet Home.

Read before the Western Ill. and Eastern Iowa Convention.

MARKETING HONEY.

Our worthy Secretary has given me this question to write upon and read to you. I presume it was his object to have me tell what *little* I know of how to market honey; and that is much less now than 2 years ago, and I knew less then than I did 5 years previous. In marketing honey, we wish to realize the most out of our summer's labor with the least expense, or in other words, How shall we put up our honey to make the most *net* profits, and to whom shall we sell it?

How we should put up our honey would depend entirely upon whom we sold it to.—The bee-keeper who has but a few hives and a home market for all he can produce will need to satisfy that demand with the least expense. If that demand be from neighbor farmers, mechanics, or druggists who buy it as an article of diet or medicine, empty it out of the indigestible comb, and sell them the cheapest honey in the best shape for consumption, and to you the most profit. Among this class there will be those who prefer honey in the comb, perhaps for looks, or fearing you may adulterate it. For those, you will need the 6 lb. box with one glass; this contains about the amount they wish at a time, and is in a neat, convenient shape to carry.

If your market should extend to the village or smaller towns, then satisfy the demand there for the least expense. Some will want the extracted honey; others, perhaps the majority, will want honey in the comb in packages, with no glass and as little wood as possible. To satisfy this demand, I know of nothing better than the Prize or Doolittle section, which holds nearly 2 pounds, being as large an amount as the consumer wants to buy, and as small as the retailer wishes to handle or that will pay you to put up.

Have your boxes or sections neatly made, and, above all, new and clean. By using guides, either comb or foundation, you can have your combs separate and straight, which not only adds system and neatness, but the consumer is able to cut them out of the frame or box in a nice cake instead of irregular, leaky pieces.

Of your extracted honey, *never* sell an article poor in flavor, or that which is dirty, or has soured on your hands, for you will lose more customers by so doing than you will make dollars. Better keep it to feed the bees.

In buying the different articles you need, trade as much honey as you can. Supply your blacksmith, shoemaker, or others you deal with, for in so doing you are marketing your honey and saving the cash (if you are fortunate enough to have any.

If your market should be in the larger towns or cities, then you will need to fill the demand there created. That demand is fast dividing into two classes, viz: those who buy honey to eat as an article of diet or medicine, and those who buy as an article of taste and luxury to adorn the table. Those who buy honey for the good there is in it do not wish to buy any expensive vessels that when the honey is gone will be useless, but will furnish their own, as they have always done when buying molasses or syrups. Now we come to the class most difficult to please. They buy honey to have something extra and nice; they are able and will pay a good price for that which pleases the eye and palate, none other being wanted at any price; they have their groceries delivered at their door, consisting of a variety of packages, done up in all shapes and sizes; among the rest, a cake of comb honey is to be delivered, free from leakage or dirt, not a cell broken, but just as nice as when taken from the hive. The retailer or groceryman is also a fancy man, dealing in fancy articles for fancy people; his time is precious, his goods the finest and best the market affords, some of which are called for if not seen; but honey must be exposed to view in the window, on the counter, or piled up at the door. He has no time to divide Harbison sections, cut combs out of boxes, neither will he have any leaky packages to daub his customers and his goods, to call in flies or fine-haired men who delight to stick a finger, knife or pencil in that tempting, beautiful comb just to taste it. To fill this demand taxes our ingenuity, and many, very many, are the ways tried to fill and cater to this class of customers, as may be seen by visiting the groceries of our large cities. To meet this demand with the least expense and the most profit, I know of nothing better than the Prize crate and box, each comb to be built so as to be glassed or not as the trade may determine.

In selling honey in our vicinity, I find it necessary to have a *price* and not vary from it. In order to have a fixed price, we must know as to the demand, the amount on the market, quality and grade, and last, but not least, we must have a wholesale price as well as a retail one, so that we shall not undersell those who buy of us for retailing. Our labor and time to sell is worth as much as that of our groceryman, which I usually make at 5 cents a pound, *i. e.*, I charge 5 cents

per pound more when selling a few pounds only than I would on a sale of 100 pounds. If selling by the 1000 pounds, I should make the price still less.

We must make a difference in the prices of extracted and comb honey. We can sell the extracted honey at a low price which will be within the reach of all who wish to *eat* it as regular as butter. We can afford it at a low price, but the comb honey we cannot; and we do not need to, for it is not bought as an article of diet but as a luxury —to have something a little extra—and, brother bee-keepers, we must get this comb honey in such shape as will appear extra nice for an extra price.

To create a home market among our neighbors, relations and friends, among those who frequently eat at our table, or call in while we are *eating to live* (not living to eat), we should always have honey on our tables in such dishes as are suitable for the show and convenience of handling. A large syrup stand for liquid honey in summer is convenient and neat. An open dish for candied honey in winter, and if we wish to ornament our table with comb honey, then put a nice cake in a fruit glass with lid. Make it appear, as is really the case, that we have plenty of honey and can afford to eat all we want and at all times, thereby setting a silent example to induce others to do likewise. Eleven years ago I took dinner with a bee-keeper, who had honey on the table in such a dish, and the conversation was such as to show me that it was not expensive as a regular article of diet. How opposite are the silent teachings of a small glass with a teaspoon! If he cannot afford to have plenty, I cannot.

Friends, if I have not written in the usual way for such articles, just remember that they are only a few dry Chips from Sweet Home. D. D. PALMER.

Eliza, Mercer Co., Ill.

Central Kentucky Convention.

The semi-annual meeting of the Blue Grass Bee-keepers' Association took place on Tuesday, May 7, 1878.

The meeting was all that could be desired, except for the unavoidable absence of two of its most prominent members, who were expected to deliver addresses, namely: Dr. S. E. Mitchell, of Bourbon Co., and John W. Bean, of Clark county.

President Patterson called the Convention to order. On motion, the rules were dispensed with, and opportunity allowed those who were not already members to become so, when 7 gentlemen enrolled.—After the reading of the minutes of the last meeting, President Patterson delivered the following able and instructive address, on

THE ORIGIN AND VALUE OF CO-OPERATIVE EFFORT:

Following the example of others in the United States, the bee-keepers of Northern and Central Kentucky felt that the interests of bee culture and the economical and commercial results which may be legitimately expected therefrom demanded an organization, which should unite the efforts and bring together the intelligence of those who apply themselves to this pursuit—such an organization, moreover, as would co-ordinate the experiences and subject to practical tests the various views, which from time to time obtain currency among those who, for pleasure or profit, study the habits of the industrious little workers.

In response to the invitation and suggestion of the Secretary, I propose very briefly to say a few words on the benefits of co-operative effort, and the grounds on which it rests.

Co-operative activity is a special phase of modern culture and enterprise. But it is by no means of recent or factitious growth. It began with the dawn of human existence, and found its earliest form of expression in human society. The family, the tribe, the municipality and the state are all various forms under which it manifested, and still manifests its existence. Isolation is incompatible with human instincts as well as with human interests. We can not conceive of an existence for the race in which, literally speaking, every man's hand is against that of every other. In the infancy of mankind the conditions and necessities of existence brought them together for mutual defense, and for the attainment of a common subsistence. In subduing nature, man would have been powerless without the co-operation of his fellows. When the first means of defense were provided for, when by common effort immunity was secured against attacks of the savage beast, when shelter from wind, storm, frost and snow were obtained, and the means of temporary subsistence acquired, the foundations of civil society were laid. The spontaneous impulse of a common sympathy, quickened by the apprehension of a common danger, brought men together and actuated them to united effort.

Out of common effort grew common rights and common obligations, which, recognized by a common moral sense, were antecedent to all legislation, and were the roots from which legislation sprang. Thus the sympathies, interests and instincts of men, shaped almost unconsciously for them the beginning of society, and established the unwritten law upon which rested the foundations of civil government. From these germs grew the mighty fabrics of ancient nationality. Upon this foundation was built the colossal structures which aspired to universal sovereignty, and which, in the splendid succession of ancient monarchies, beginning on the banks of the Tigris and ending on the shores of the Bosphorus, went far to realize the possibility of world-wide dominion. But the idea of co-operation and organization found expression in other forms, and in other relations than in civil government. Its beneficent results were not confined to the family, the city, the canton and the State.—When men looked into their own consciences they discovered thoughts and feelings, hopes and fears, rights and obligations not bounded by the narrow limits of material organization around them. While men in general were drawn together by a common sense of dependence upon something beyond and above nature, some in

particular were attracted to common effort by the attempt to formulate and interpret the intellectual activities and moral impulses interwoven with their being—activities and impulses shared with the many, but whose import and significance the many failed to appreciate. Hence the variety of culture and ceremonial, which sometimes united people, and sometimes placed them in antagonism, and hence the philosophic schools and theosophic mysteries of various kinds, with reference to which all ancient literature abounds.—These, impressing a common thought and kindling a common desire, fostered the growth of human intelligence, deepened and quickened the moral sense, and elevated mankind to conceptions more or less adequate to their origin and destiny.

During the middle ages, when commerce began to be a great factor in human progress, and the burgher class attained an importance in the state unknown to antiquity, commercial unions were formed, and tradesmen allied themselves together for mutual protection. These leagues and guilds contributed not a little to the growth of civil liberty, by the concessions which they extorted from time to time from the central power. Protected at first by the central power, and supported as a counterpoise to the arrogance of a turbulent feudal nobility, they in the end consumed the vitals of the despotic power by whom they were encouraged, and by whose sufferance and countenance they had existed. During these times of dissolution and reconstruction, of meek submissiveness and high-handed violence, when nations and races were unconsciously working out their destinies, the co-operative activity of the guild, of the league, and of the cloister—agencies diverse, having little in common, and often antagonistic, each on its own line of action, and productive of diverse results, but afterwards co-ordinate to a common end—played no unimportant part in the transition from the civilization of antiquity to that of the modern era.

But it is not to ancient or mediæval times that we must look for the fullest development of co-operative activity. The revival of letters gave, by the diffusion of knowledge, a vast impulse to united action.—Many who, under the conditions heretofore existing, knew little and cared less about how the world was governed or what the thoughts of men were, found a new light dawning upon them. The enfranchisement of the minds and bodies of men raised all humanity to a higher plane. The spread of intelligence quickened all the dormant energies of mankind, and an era of mental and material progress was entered upon, such as the world had never known. Associations were formed for the promotion of scientific discovery. The value of united effort was felt and recognized in departments of human activity theretofore unknown.

As early as 1272, the Academy of Belles Lettres was established at Florence, followed at Naples by the Academy of Mathematics in 1540, and by that of sciences in 1560. Possibly a few years earlier than the establishment of the Academy of Belles Lettres at Florence, was the founding of the Sarbonne at Paris, followed by the schools of painting in 1391, of music in 1543, and of the fine arts in 1648. The impulse given to the cultivation of art, literature and science, by these and kindred associations, was immense. The works of the greatest geniuses of the day were brought together, their merits acknowledged and their faults noted; canons of criticism were established and perfected; the friction of mind upon mind quickened invention, encouraged discovery and perfected art; publicity and reputation were for the most part no longer delayed, and fame, if not wealth, was the reward of industry and talent. The noble, the wealthy and the high-born vied with each other in the patronage of genius and the encouragement of art.

But not till the founding of the Royal Society in 1660, and the Academies of Inscriptions and Sciences by Colbert, a few years later, did co-operative activity make manifest what grand results it could accomplish. Boyle and Brouncker, Wallis and Ashmole, Sir Christopher Wren and Dr. Oldenberg have made their names forever famous by their efforts to realize the conception of a learned society sketched by the author of the "New Atlantis." To this society Newton gave, in 1686, the first book of his immortal "Principa." In 1699, a model of Savery's condensing steam engine was presented. In 1761, the Royal Society sent Halley to St. Helena to observe the transit of Venus, perhaps the greatest event in its consequences to astronomy since the discovery of gravitation by Newton. In 1707, the medal of the Royal Society was founded by Copley, given in after years to famous men, as a recognition and reward of scientific discovery. Gray, the father of electric science, was the first to whom the gold medal was given. Since then, it has been awarded, among other illustrious names, to Franklin, Bradley, Rumford, Hunter, Faraday, Herschel and Davy.

The Royal Society, in its aims and results, may be taken as the type of voluntary association for the promotion of scientific discovery.

The Institute of France, embracing the five famous sections, each consisting of 40 members, has achieved no less renown.—Many of the greatest discoveries made by the greatest of Frenchmen owe their origin and their promulgation to the stimulus and aid given by this illustrious body; and, to-day, no distinction is more coveted than membership in the "Institute de France."

Encouraged by the example of the Royal Society, associations were formed, not only in the metropolis, but throughout all the large and many of the second rate cities of Great Britain, for the cultivation and advancement of special departments of science. Of these, time allows me to mention only a few. Whole pages, nay, pamphlets might be filled with their mere names. Take for example, the Linnæan Society, for the cultivation of natural science in general; the Geological Society, Geographical Society, Chemical Society, Archæological Society, Anthropological Society, Society of Antiquaries, Ray Society, and the Statistical Society. Under the auspices of these and

kindred bodies, and through their aid and encouragement, the boundaries of knowledge have been pushed forward, and depths have been touched and heights reached, of which our fathers never dreamed. The British Association for the advancement of Science makes annual appropriations to facilitate discovery and test results in almost every branch of physical science.—Similar associations have sprung up in the United States, and are doing excellent service. In all the great cities of the Union, historical, philosophical, scientific and fine art associations bring together their respective votaries, and by concentration of forces and division of labor secure results impossible under individual effort.

Another phase of co-operative effort, peculiar to modern times, is found in trades and trades unions. These, when perverted, as they often have been, are productive of disastrous consequences to labor and to capital; but when confined to a legitimate activity, are productive of great and permanent good. Almost every activity, in which human brain and human muscle manifest themselves in material production, have associations formed for mutual benefit and mutual protection. Sometimes their operations are confined to sick benefits, aiding members in distress, caring for their families when deprived of their natural protectors, providing employment for the young, and placing them beyond the reach of poverty, furnishing them with an education and employment, helping them, in short, to help themselves, by fitting them to become honest, capable and industrious members of society.

Sometimes, by adding capital to labor, they become corporate bodies for production; reaping, thereby, not only the fruits of individual labor, but sharing in the production as well. In England, this kind of co-operative activity has sometimes taken a wide range. Under the auspices, and through the capital of such an association, stores are carried on, supplying all that families require; flouring mills are in operation to furnish breadstuffs; cotton and woolen mills have been set agoing, on a scale second only to those of Manchester and Bradford. In these enterprises there was employed last year, under the control of a single association, capital equal to $2,300,000. And why should not such enterprises be extended? There is an abundance of capital from the savings of the working classes, if properly employed, to extend such operations as these, and to yield large results in annual dividends.—One-half the amount deposited by the working classes in the savings banks of Great Britain, if employed in joint-stock enterprises, in manufactures, and in commerce, would add immensely to the yearly earnings of the working classes and largely to the national wealth. Of the $350,000,000 on deposit in the savings banks, $175,000,000 might be thus employed, yielding to the depositors annual average profits, amounting to over $17,000,000.

What has been done in Great Britain might be done in the United States. Our population is larger, our artizans better paid, and the aggregate amount of savings thus employed could in a short time fairly double the amount given above. There is little doubt that this phase of co-operation will continue to attract more and more attention in this country and in Europe, and that in the future it will form no unimportant factor in the adjustment of the claims of capital and labor.

Still another phase of co-operation, and bearing more directly upon the object for which we are now convened, is found in associations whose immediate object is not production, but the best means to facilitate production. Such associations exist all over our own country, and in many foreign countries. Notable among these are agricultural, horticultural, pomological, wool-growing, cattle-breeding, and bee-keeping associations. Here the end sought is to determine the principles which render successful production possible, leaving their applications to individual agency.—Here the end is, by observation and experiment, to generalize such a body of knowledge as shall enable those who devote themselves to these pursuits to realize the greatest possible expenditure of labor and capital. If hundreds of intelligent workers be engaged in the same pursuit, each collects facts and places himself, with special relation to the objects with which his activity is conversant, to the body of facts collected by each, and in the relation sustained to the end in view, there will be two elements, a general and a special; the general being common to all observers, and the special peculiar to the one. The special will sometimes be the result of fortunate or unfortunate accident, sometimes of the idiosyncracy of the individual. Through the former, the more obtrusive elements which enter into the body of knowledge will be rapidly generalized; through the latter, the less obtrusive—but not, on that account, the least important elements.—Moreover, these latter will continually tend to multiply, as the powers of observation are cultivated and strengthened. By the co-operation of the two, all the elements will be gathered, conjecture will rise to hypothesis, hypothesis to theory, and theory in the end will rise to the dignity of science, resting on a broad basis of observed facts and tested by experiment. Now, this is what workers, associated together for a common purpose, accomplish with the least expenditure of mental and physical force.—The observations, tests, and experiments of hundreds of workers and thinkers are brought together into a common stock, discussed, criticised, questioned, put in every light, in every shade, viewed from this standpoint, then from that, and the inferences which the seemingly established facts warrant, if not conclusive, are provisionally accepted till further light is thrown upon them. Then the whole array of workers, leaving the well enough established to take care of itself, apply themselves energetically to collect further facts, in order to establish or refute that which was only provisionally accepted, to take it from the limbo of uncertainty and the region of the possible, and place it either among accepted truths or relegate it forever to the domain of exploded fiction.

The certainty that by co-operative effort error will, however plausible, be exposed and elminated in the long run, tends to make men less vehement in the defense of views still open to question, and more tolerant of the opinions of others. Though like results would undoubtedly be attained through individual investigation working apart and communicating its results to the public through the ordinary channels, yet by co-operative effort these results are compassed more speedily, and sooner placed upon an enduring basis.

Men cherish their opinions as they do their offspring. Mischevious notions, when once they obtain currency, often work baneful results before their fallacy is exposed. They are earnestly and vehemently defended, and as earnestly and vehemently assailed. When a speedy confirmation or refutation is impossible, they entrench themselves with an ardor, and maintain their defenses with a tenacity, which stimulates corresponding vehemence in the assault. Many of the riots which have afflicted the world are traceable largely to this intemperate conflict of opinion. Wars of words have not unfrequently given place to wars waged with more destructive weapons; and the stake and the battle-field have enforced, for a time, a unanimity of opinion, which, while it lasted, proved the paralysis of intellectual activity. By voluntary association and co-operative effort, evils such as these, similar in kind but less in degree, have either been avoided or reduced to a minimum.

The results of associated effort have already been conspicuous in bee culture.—Within a quarter of a century the net returns from the honey bee have increased more than one hundred fold. The habits of the industrious little worker have been carefully studied, its natural history has been investigated, the laws which govern its reproduction and development have been learned, and the conditions of its remunerative activity have been made known.

All this knowledge would have become the property of the scientist and the producer in time, but the old routine has been set aside, and the slow course of development which satisfied investigators and producers in the time of our fathers, has given place to a united activity by which the area of knowledge has been rapidly widened, and the aggregate of production increased many fold. Thousands of tons of the most delicious food, whose sweetness had been for ages literally wasted upon the desert air, have been added annually to the stock formerly known and available, and thousands more will be added year by year from the same source of supply.

I am persuaded that this industry is still in its infancy, and that in the future, when bee culture shall have been extended, as it undoubtedly will be, not only means of livelihood but avenues to wealth will be opened up to the industrious and the frugal from this source of remunerative activity, the value of which I should hesitate to estimate.

It is, therefore, with pleasure that I see the beginning of a movement in Northern and Central Kentucky to develop an industry which our rich and broad pastures, and our blossom-bearing fruit and ornamental trees are eminently adapted to encourage and render profitable.

H. C. Hersperger, of Jessamine county, delivered the following interesting essay, on

BEE-KEEPING, A SOURCE OF WEALTH:

In the present state of society, when every one is living up to the full extent of his ability, it is wise to make money from all the honest sources within our reach.—That we may learn to make money from the management of bees is our business here to-day. If we can, by intelligence in the application of science to their habits, make them a source of wealth to our people and the nation, we will have done much for the good of society.

We hear of bees from the earliest ages down to the present time. They are spoken of in the Bible, many centuries before the Christirn era, and in the writings of Virgil and Columella; but they seem to have had no management except that which was dark, mysterious and uncertain. No good results are reported of them. The correct understanding of their natural history, and the proper application of art and science to their habits was left for Huber and Dzierzon, and Langstroth and Quinby.

The laws which govern bee instinct were unknown to them. The science and art, so applicable and essential in the successful management of them in the present day, were unthought of in the past, as they are unthought of now by nine-tenths of our people. The light had not yet come out of them. Fifty years ago, the light had not come out of steam and electricity. Now they are the motive powers of the world, bearing telegrams to every part.

Of course, we do not claim for bee-keeping a place among these wonderful agencies, but we do claim for it a place among the industries of our people, capable, by intelligent management, of giving as good results for the outlay as are obtained by any work done upon the farm.

It appropriately belongs to farming.—Farmers have the soil and the flowers, and where forage is wanting, they can supply it by sowing and planting. And it is to them I especially direct my thoughts today. The flowers upon your fields, meadows and waysides contain in their tiny cells a sreasure—a delicious sweet, secreted day by day, and unless some arrangements are made to gather it in, will be daily wasted upon the air. It is this saving, this gathering from every available sourse that brings thrift and success to the farmer.—Shall we let this treasure of the flowers be wasted in our fields or shall we gather it in, is a question worth consideration.

He is a poor economist indeed, who suffers available treasure to go to waste around him. What would you think of the farmer who would not gather the golden grain when it was ripe and waving in the fields? Or, what would you think of the man who would harvest the new crop and let the old crop go to waste? The man of thrift gathers and saves from every possi-

ble source. He lets nothing go to waste.—He gathers in his corn and his wheat, his rye and his barley, and he gathers also the honey from the flowers of his fields. It is his. He pays nothing for it. Genial nature plants the flowers and fills their cups with honey, and he gets it simply for the taking of it, and thus saves what would otherwise be lost.

Now, are we at liberty to neglect the development of an industry that can, by proper management, be made to bear fruit an hundred fold, and thus add to the happiness of our people and the wealth of our State?

We are told by Prof. Shaler and others that we have untold mineral wealth in our mountains. But the great question of the day is, how to reach it. Legislatures have met and adjourned; conventions have done the same; the wise heads of the State have talked the matter up, but still the work remains undone. There is no highway opened up to these mines of wealth.

My own country has expended 20,000 dollars in the matter, without one cent of return. And, I fear, before these vast riches are brought to our doors, we will all have gone to our long resting places.

But it is not so with the flowers. We want no highway to reach them. They are all around out doors. They are in our fields, and the honey is in them, and each one of us is responsible for himself, if he does not prepare the little, winged harvesters to gather it in.

As I said before, it belongs to farming, and pays as well as any work done upon he farm. The returns for the investment and labor are as good as the returns from any of the products of the farm. Am I aying too much? Have I made an asserion which I cannot sustain? My aim is not to be extravagant, or say one word in this matter which is not strictly in accordance with my knowledge and belief. My experience as a bee-keeper is the very best evidence I can offer. I have taken 4 crops in succession, and they have paid me more than 100 per cent. on the investment. They have averaged me, for the 4 years, more than $12 to the colony. For the last 2 years I have kept 30 colonies, and they have given me $12 to the colony. What better can you do with wheat, corn or hemp?

Many of our people at this time are turning their attention to sheep husbandry, and they think it pays well. But, take 30 sheep, a fair average for an ordinary farm, and make your calculations and see if they will yield $12 profit per head. They will require more care than your bees, the year round.—They will cut down your grass, and they will not yield you $12 per head, notwithstanding you have a protective tariff for your wool and I have none for my honey.—Thus it appears that bee-keeping is fully equal to, if not better, than sheep raising.

Again, for the last 2 years I have taken from 30 colonies 2,000 lbs. of honey each year. Now, if I can raise 2,000 lbs, can not my brother farmers do half as well and raise 1,000 lbs? Doolittle, of New York, took last year over 500 lbs. from 1 colony.—But suppose every farmer in Jessamine county would make 1,000 lbs. instead of 2,000 lbs. as I have done; and as we have just about 600 farms, of 200 acres each, it would make the round sum of 600,000 lbs. of honey for Jessamine county.

I consider this not beyond the capacity of our county when the seasons are at all favorable, but I doubt whether our farmers will make 1,000 lbs; therefore, I will divide it again, and make it 500 lbs, ¼ the amount I have taken, and about what Doolittle took from 1 colony only, and then we have for our county just 300,000 lbs., surely within the reach of her people. And this, at 25 cts. per lb., is $75,000 for Jessamine county; and, as our State has about 120 counties, I will multiply that sum by 100, and we have for the State of Kentucky $7-500,000 annually going to waste in her flora. And as a source of wealth to the nation, let us multiply this amount by 30, leaving off 8 of the States, and we have $225,000,000 of wealth lying in the tiny cells of her flora.—Thus intelligent bee-keeping seems destined to become a source of untold wealth to our nation.

In this calculation I believe I am far under the true estimate. In a few years, you will learn from the census of the States and the nation, through experienced bee men, that the resources from this direction alone will be estimated at from $500,000,000 to $1,000,000,000.

But, of course, we do not all expect to make fortunes in this business. I do not discuss it for that purpose. The price of honey may change. The law of supply and demand governs the market price in all commodities. If we overstock the market with honey, as with any other product, the price will fall. Suppose it does. Who cares for that? We still have a home demand in our families, which, if supplied, will be a blessing to us right here. This is the special view I wish you to take of it.—How many of our farmers are absolutely, sorely taxed for the sweets that go upon their tables? How many are in debt, and how many are barely able to come out even at the end of the year? To these I would say, keep a few colonies of bees, manage them intelligently, and supply your own families with this best of sweets, free of expense. H. C. HERSPERGER.

On motion, the President appointed the following committee on apicultural supplies and implements: H. C. Hersperger, Thos. T. Hayes and O. N. Featherstone.—After due deliberation, the committee brought in the following report:

"We, your committee on apicultural supplies, recommend the Langstroth hive above all other hives, for convenience of raising box or extracted honey; we also recommend the Bingham smoker as the most effective smoker. We approve of the half gallon glass jar with glass top, as the very best jar for comb and extracted honey. We also approve of the 1 and 2 lb. jars of C. F. Muth, of Cincinnati, for extracted honey. The extractors of Novice and Muth were both recommended so highly that the committee were unable to decide between them."

Mr. C. H. Dean, who had on exhibition a Simplicity hive, gave his views and preferences for the same, and said, that in following out the suggestions of A. I. Root, of Medina, Ohio, the inventor, he had made a half chaff hive, and approved of it, not only as a winter, but a summer hive. Mr. Hers-

perger said he could attest all Mr. Dean said about the Simplicity hive as in the cold northern climates. They had experienced great difficulty in bringing bees through the winter; but since they have used the chaff hive it seems to have given general satisfaction. In regard to wintering bees, Mr. Robt. Featherstone said the best and most successful bee-keeper he ever knew was a German, who simply left his bees on their summer stands, and filled the upper story of his hives with corn-cobs, which would naturally absorb all dampness that ascends from the bees, and acts as a ventilator and protection for winter at the same time.

Mr. Williamson explained how he wintered his bees safely by simply making a rough box out of common plank or old dry goods boxes, large enough to encase the regular Langstroth hive. Leave a space of from 3 to 6 inches all around, have the top lid loose, to slide, as on a two-story hive, make a small funnel, say ½x4 of thin plank, close up all the entrance in hive, except just the sizes of the mouth of the funnel, let the funnel extend even with the outside of the rough box, and it is complete.

They wintered all their colonies safely. The boxes will last for many years, and the hives might be left in them all summer with equally good results, particularly where there is no shade; he agreed with Mr. Featherstone in regard to filling the upper story with corn-cobs or straw, or a thick chaff mat, instead of the honey board; of course, in this climate, the same protection is not necessary as it is in northern climates. The main points of wintering in this climate is to break the wind and give ventilation without draught..

Thos. L. Bryan asked if an air space for wintering would not answer as well as chaff. The President said it would, as he had proven by many practical results; for instance, he said, a dwelling house built with a double wall, and an air-space of only two inches, was always the driest and warmest house in winter, and the coolest house in summer.

Mr. Williamson gave the following address on

HONEY, AND MARKETING IT.

The subject of honey and marketing it, is one which conerns nearly every bee-keeper, and very properly too, because in these, aside from pleasure, rests the just reward of study and labor; for it is fallacy to think, without study and labor in bee-keeping, as in all other pursuits, great results can be accomplished. In marketing honey, it should never be forgotton that a good article in an attractive form will always command the highest price, the best reputation and a steady demand.

We see this illustrated every day. The confectioner assorts and classifies his candies and fruits; in fact, arranges everything in his store in the most tempting style, to captivate human taste and appetite. The druggist adorns his packages of powder with lithographs of beautiful women, his toilet soaps are put up in delicately perfumed boxes; and thus it is in every branch of human industry—the great aim of the "knowing ones" is to make things look attractive.

At the present time, in large cities particularly, there is more demand for comb honey, in small frames and boxes, than for extracted. This result is due, in a great msasure, to the frauds that were practiced in former years, by manufacturers of what was called "strained" honey.

Extracted honey is the purest honey possible, and physicians have often denounced the idea of eating honey and comb also; and when the useless and injurious effects of eating comb honey is generally understood, we shall shrink from eating it as we would from eating glass.

Extracted honey may be eaten at all times with perfect impunity. Our Jewish friends use honey in many of their religious rites, particularly in the Feart of the Passover, and so strict are they in regard to its purity that the price to be paid is no object. The rabbis instruct them to buy candied honey as a precautionary measure against impurity.

And when we consider that pure honey is the *very* essence of flowers and plants, in which, we are told, there is a remedy for every disease, surely we can not doubt the happy combination of honey as medicine. The Scriptures tells us in many passages of the wonderful efficacy of honey as food and medicine. And I believe as the treatment of disease becomes more and more rational, so will the value of honey as a medicine become more and more apparent. Honey has generally been looked upon as a luxury. The price has been considered high; the consequence is that fashionable golden syrups have been filling the place that honey ought to occupy, and which honey is now fast superseding as the injurious effects of these syrups become more generally known. We have often wondered what discolored our teeth after eating certain syrups and drinking tea. Can we doubt but that it was the chemical action of the acids used in the manufacture of these syrups? How often it has been proven by analysis that these syrups are adulterated with injurious chemicals, in order to give them that bright golden color so inviting to look at—while pure, extracted honey is as free from all impurity as the dew drops of morning; and I believe the time is not far distant when the use of honey in every home will become as common as "household words." WM. WILLIAMSON.

The Secretary read a communication from the Executive Committee of the National Bee-keepers' Association, which was received and filed, also a communication from W. J. Davie, M. A., State Commissioner of Agriculture and Statistics, after which was read Mr. Davie's interesting article on Bee Culture, "from his first annual report of 1877."

Mr. Ollie Redd asked if it was proper to try to prevent bees from swarming.

Mr. Hersperger said it certainly was, and the aim of every bee-keeper should be to have his bees make honey, and not bees.—He said all colonies should be kept strong; and to prevent swarming, take out all the queen cells, put the bees into a new hive, place it where the old one was, and

the change will cause them to imagine they have swarmed, and they go right to work. The difference between putting them back into an old hive and removing the whole colony into a new one is, that in the old hive they have taken the swarming fever, and will swarm again in 10 days or 2 weeks. He would not offer this as an infallible rule, but from one colony of his own, managed in this manner, he had taken 230 lbs. of honey. Mr. H. said he did not approve of clipping the queen's wings, to prevent swarming, as he had lost quite a number of fine queens by doing so. He believes the bees regard her as becoming old and defective, and go to work and raise another.

T. L. Bryan asked what constitutes honey-dew.

The President's explanation of the substance generally known as "honey-dew" was, that the trees and plants are besieged with innumerable little insects, who puncture the leaves, which causes the fluid to flow, on the same principle as a splinter puncturing the human system and causing blood to flow.

The Secretary then read the statistics, sent by General LeDuc, U. S. Commissioner of Agriculture, which showed that in 1870, when the last census was taken, that Kentucky stood third in the list of honey-producing States. The returns for that year being 1,171,500 lbs. of honey, and 32,-557 lbs. of beeswax; and for the United States, last year, the crop of honey, at a low estimate, is put down at 35,000,000 lbs.

The Secretary read several communications from the Hon. T. J. Bush, in reference to the new law, passed by the last General Assembly, as follows:

Chapter 1026. An act to protect the bee-keepers of Kentucky. Approved April 10, 1878.

Said act reads as follows:

§ 1. *Be it enacted by the General Assembly of the Commonwealth of Kentucky*, That any person or persons, who shall sell or cause to be sold any manufactured honey, unless such honey is so represented and designated as manufactured honey, shall, for the first offence, be fined in any sum not less than $10 nor more than $100; and for each repeated offence shall be fined not less than $50, nor more than $250.

§ 2. That any person or persons, who shall sell or cause to be sold any manufactured honey which contains any substance injurious to health, shall, for the first offence, be fined in any sum not less than $10, nor more than $100; and for each repeated offence, shall be fined not less than $50, nor more than $250; and such adulterated articles, by order of the court, shall be destroyed.

§ 3. This act shall take effect from its passage.

On motion, a unanimous vote of thanks was tendered General LeDuc, U. S. Commissioner of Agriculture, Washington, D. C.; W. J. Davie, A. M. State Commissioner of Agriculture, Frankfort, Ky., and the Hon. T. J. Bush, for the valuable information furnished and kind offices performed. On motion, the next place of meeting will be this city, on the first Tuesday in October next, at 10 a. m.

W. WILLIAMSON, *Sec'y.*

☞ Bees that go out of their hives in the morning in search of food or honey, from floating apiaries, find their home by comparative location, and their particular hive by form and color.

Correspondence.

For the American Bee Journal.

The Langstroth Hive.

EDITORS JOURNAL:—Will some of your many intelligent readers, who have had long and extensive practical experience in bee-keeping, as a specality, do me, and, no doubt, many others of your subscribers, the favor to state, through the columns of the JOURNAL, what, in their opinion, are the advantages of using what is called the "Standard Langstroth" frame that is 9⅛x-17⅝, in preference to a frame of the same kind, but smaller dimensions, say 10x12?—I notice that in the last 2 or 3 years there has been a general tendency, especially in the Western States, to adopt the standard Langstrrth frame. Many bee-keepers incuring the great expense of transferring large apiaries. I can readily understand the convenience and benefits (to dealers in apiarian supplies, especially), of having every bee-keeper use the same frame; but taking into consideration all the advantages and disadvantages of the two frames mentioned, I cannot possibly comprehend why the "Standard Langstroth" should be preferred as the frame for all to adopt.

"Being shallow, bees will winter better, and go up into the sections sooner."—"Fewer frames are required; consequently, a larger number of colonies can be manipulated in the same length of time." These are about all the advantages I have ever heard claimed for the "Standard Langstroth." I have had no experience in wintering, as we have no winter here; but it is evident that the difference in depth of the 2 frames is so small (only ⅞) that the difference in results, if any, either in wintering, or producing comb honey, must be imperceptible.

The stooping position, necessarily taken by the bee-keeper in manipulating combs, is very fatiguing; and, as the combs must frequently be held for several seconds, and often minutes, as high as the head, in order to examine them for queen, eggs, &c., a very little too much weight tells fearfully on his back and arms in the course of a day's steady work. A 10x12 comb, completely filled and capped, weighs from 6 to 8 lbs., and a 9⅛x17⅝ from 8 to 11 lbs., and the broken down bee-keepers, all over the country, is sufficient evidence that the latter is entirely too heavy for any body that has a large number of colonies to handle. We especially pity the ladies who undertake such an enormous task. The murderous sewing machine, or the detestable wash-tub would prove an easier place; 10x12 frames are much less liable to warp and hang crooked than 9⅛x17⅝. Bees are more apt to build straight combs in the former than in the latter. Here the dealer in apiarian supplies will say, "*that is a dead issue*, use comb foundation and secure straight combs." But, comb foundation will warp and sag more in a wide frame than in a nrrrow one; and then again, new and partly finished combs are much more

liable to be cracked or broken out entirely, in wide than narrow frames, in handling, and especially in extracting.

I have made bee-keeping a speciality and constant study for several years. Have upwards of 300 colonies, and secure an average of more than 100 lbs. extracted honey per colony, each year, but have not yet been able to discover any advantage to induce me to adopt the "Standard Langstroth" frame. Still, I am always willing and ever eager to learn, and perhaps some of our fellow bee-keepers may very readily show important points that I have overlooked. WILLIAM H. WARE.

Bayou Goula, La., May 20, 1878.

[Lest anything we might say on this subject might be construed to be said from some interest in selling hives, we invite some one to answer friend Ware, who is in no way interested in any hive. The superiority of the Langstroth hive may be easily demonstrated to any unprejudiced person, but we prefer to let others speak on the subject.—ED.]

From the Los Angeles Star.

Preparing barrels for shipping Honey.

Let the barrels stand in the sun 4 or 5 hours, with the bunghole open, then go carefully over every hoop and drive it tight, for they can almost always be driven a little, if the barrels are new; then, if you wish to paint them, do that next, with some light colored paint, so as to reflect the heat of the sun, instead of absorbing it, as any dark color will do. Then take 10 or 15 lbs. of clean beeswax, put in an iron pot without any water, and heat it until it boils, taking care not to let it boil over and catch fire, which it would do very readily; when hot, pour it into the barrels with a large funnel; as quick as possible, put in the bung and roll and tumble it every way as fast as possible for one minute; then take out the bung and pour out the wax into the pot again, and, if quickly done, there will be only about one pound remain in the barrel. The hottest part of the day is the best time to wax barrels, and also the best time to fill them with honey; and it is very important to not fill too full, as honey expands and contracts a great deal with heat and cold.

If a barrel is filled in the morning when the honey is cold, to within 1½ inches of the head, and then set in the sun, by 12 or 1 o'clock it will run over; or if bunged up, it would strain the barrel and leak afterwards, so it is not safe to fill closer than 2 or 2½ inches of the head; and if the barrel is filled on the side, not less than 3 or 3½ inches. When filled, take a wet cloth or sponge aud wipe off any honey that may be on the edge of the bunghole; then take a piece of thin cotton cloth and dip it into hot wax, both sides, put it over the end of the bung, and drive it tight, cut off what cloth remains outside close with a knife, dress off the bung smooth, and take a hot soldering iron and go over and all round the bung with wax, as if it were solder, and soak it in wherever it will go, then nail a piece of tin over it and you need not fear your barrel leaking honey.

E. W. SINCLAIR.

For the American Bee Journal.

Chips from Sweet Home.

As bee-keepers, as well as others, are sometimes troubled with felons, and such pets are not pleasant, I will give you a cure which I have never known to fail:

Take plug tobacco, pick in pieces and boil in soft soap; make a poultice of the leaves and bind on the felon. You will find that it will quit paining immediately, and will continue easy till the poultice is dry.—When dry, and it commences to pain, put on another poultice which you have boiled in soft soap. Continue this until it quits paining when the poultice is dry. This will occupy from 6 to 10 hours. I have never known this to fail, although 4 or 5 days gone. Try it.

To hold Prize Boxes together on the double portico, Langstroth hive, nail 2 pieces, ⅞x⅝x26 in. on top of 3 pieces ¾x⅞-x15¾. One of the 3 pieces should be nailed in the center, against which the 2 inside boxes, of 7 sections each, is snugly placed; and the other 2 boxes is snugly placed against the 2 end ones. The separators are 5x12⅛. These not only keep combs straight but hold boxes firm and prevent them, when wedged together, from slipping by each other. At each end is placed a glass.

STATISTICS ON HONEY AND WAX.

The executive Committee of the National Bee-keepers' Convention has appointed one person in each State to gather information as to the amount of honey and wax produced in 1877, also the number of hives, &c. As I have been appointed, I would ask the assistance of each bee-keeper in Illinois, that we may make the best report of any State. At our last convention, we were surprised to find the amount of honey and hives kept by 70 persons. The Secretary will give the report soon. I wish each bee-keeper in Illinois would send me a postal card, giving me the names of the bee-keepers in his neighborhood, with number of colonies each had in the spring, and the amount of honey and wax produced in 1877. Those of you who read this, do so at once; *don't forget it*, and be sure to give as near the exact number of colonies and amount of honey and wax produced in 1877 as convenient. Also give names of bee-keepers, hives, honey and wax of your neighbors, whom you think will not see this. Be brief, as follows: D. D. Palmer, 150 colonies, 15,000 lbs. honey, 24 lbs. wax. By this means, I will collect the whole, if possible, and make a synopsis and send to the National Convention. Address, D. D. Palmer, Eliza, Mercer Co., Ill.

R. C. OTIS.

When a prominent apiarist falls from the ranks, we, as small bee-keepers, like to know something of their whereabouts. R. C. Otis, of Langstroth bee-hive law-suit

fame, through over taxation of the brain, became an imbecile of Mount Pleasant, Iowa, Insane Asylum; where, I am told, by Mr. Thomas, of that institution, that he died after suffering from softening of the brain. Mr. Thomas says he paid but little or no attention to anything. Will Mr. Thomas give, in the AMERICAN BEE JOURNAL, the particulars of his last days?

OLD QUEEN GOING WITH SWARM.

Among bees, like all other animated nature, there are exceptions to all general rules, e. g. The old queen goes with the swarm. I never knew but *one* exception to this. In the summer of 1877, a colony swarmed twice; both times taking a young virgin queen and leaving the old, laying queen in the hive.

June 3rd, and no surplus boxes yet. May has been cold and wet. We are building a honey house, for storage of 30,000 lbs. of honey. We believe in setting our mark high.

CYPRIAN BEES.

MR. EDITOR.—I, like many others, wonder when I see Cyprian bees advertised in the AMERICAN BEE JOURNAL for the low price of $5; and they are pure, for the advertisement says "No impure bees in my locality;" also imported Italian queens, $3.75. At these figures, we want some of those queens, if we can be assured by parties who have bought of him that they are pure, but out of the many, I cannot get one to answer favorably; in fact, they are silent.

As you were lucky enough at our Bee-keepers' Convention to draw a queen of Hardin Haines, please send me a setting of eggs.

PRIZE BOX HOLDER.

The one I have invented for my double-portico Langstroth hive is made as follows: Take 3 strips ¾x⅞ of an inch,, and as long as the honey board is wide, *on* these put a strip at each end ¾x⅞ of an inch edgewise. This will hold 4 rows of 7 sections each.

"OUR HOMES" DEPARTMENT.

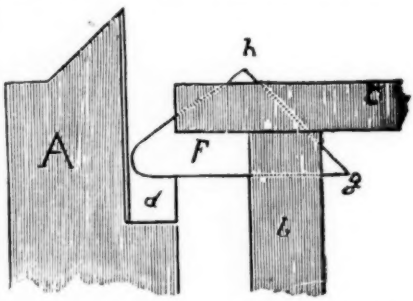
A. I. Root, in the June number, under "Our Homes," gives one very mild letter from Mass., in which John D. White asks, "Would it not be better to leave the religious department out of *Gleanings?*" &c. A. I Root says in his religious comments on this, moved by the Spirit, of course: "I have had, perhaps, a half dozen similar letters in the past 3 years."—Now, Novice repent, and have your God to straighten you up, for in this neighborhood I *know* of (no "perhaps") a half dozen "similar letters," only much more so, being sent to you, and if your 3,515 subscribers would average as many "similar letters," to you, as a few do here, your "perhaps a half dozen" would number over 1,000. I am a liberal minded bee-keeper. I do not want MYSTERY written on my hives. We would like *Gleanings* if not spoiled with so much baby talk in "Our Homes."

I had a talk with a neighbor bee-keeper, one of the best informed on bees we have; he is also a writer of Scraps for the AMERICAN BEE JOURNAL, as well as *Gleanings*. He says he has written Novice a "half dozen similar letters" himself. We have plead and reasoned with him to do to others as he would have others do to him. Would he wish Catholics, Jews, Turks, infidels, heathen, &c., to take an underhanded way of forcing their ideas upon him? I have taught school for 5 years, and what would I think of a pupil doing wrong every day; yes, perhaps every hour, but as constantly asking my forgiveness and making new promises that he would do better, but as often breaking them, with the idea that he could make another promise as good?—Such a pupil is Novice, but what does his teacher think of him? D. D. PALMER.

For the American Bee Journal.

Kretchmer's Metal Frame-Bearings.

In the illustration accompanying this article, *A* represents the end of the hive; *d*, a metal rabbet of folded tin; *b*, the end piece of a frame; and *c*, the top; whilst the tri-angular piece, *F*, is a piece of galvanized sheet iron, resting edgewise across the metal rabbet, and supports the frame. In making the frame, the point *g* is, by the use of a guage block, driven centrally through the end piece of the frame, and the point *g*



clenched; the top is next driven over the point *h*, and the point clenched, so that the piece *F* has a position in the centre of the width of the frame; the dotted lines indicate where it passes through the wood.—Although the clenching alone gives it the strength of an ordinarily nailed frame, the frame is, in addition, nailed in the usual way.

Before enumerating some of the advantages of this bearing, I desire to state that this is not a new, untried idea. I have had over 5,000 combs built in such frames, and have used them over 8 years, testing their merits by the side of nearly every device known for the purpose, and hence claim to know whereof I speak.

Some of the advantages are:

The frames are never glued to the rabbets, as the point of support is less than the head of a pin, the bees passing under, over and between, at pleasure.

In the metal rabbets are cut, with a single file stroke, small V shaped notches, at such distance apart as it may be desirable to have the distance of the several frames from centre to centre; in these small

notches the bearings, *F*, rests; the frame is simply set on the rabbet, and by a slight movement of the finger, they glide into their proper places and stop; and not only aiding the beginner to set his frames at proper distance, but also greatly aiding the expert in the manipulation of the frames.

In carrying a hive, the frames cannot slide together, and if, perchance, the hive should not be level, the frames will always assume a perfect perpendicular position, and retain their position on the rabbets, even should the hive be tipped 30°. The assertion that the filling with honey, of one side of the comb, would cause the same to swing out of perpendicular, is not sustained in practice, as the distance from the centre (the point of support,) to the outside is too small, compared with the depth of the comb or frame, to make it perceptible in practical operation.

The notches in the rabbets do not make the frame *fixed* at always the same place, the notches being so small permits the frame to be set at any place on the rabbets, should an extra thick comb make such change necessary.

The pieces, *F*, greatly strengthens the frame, acting as a corner brace, and when the points are properly clenched, the frame may be used without any additional nailing; but when nailed, they have strength to support 30 lbs., without giving way.

Nails, staples, or wire driven into the end of the frames add nothing to their strength; and frames thus arranged are more or less glued down, as they present a larger surface, and if set in notches, requires the notches to be considerable deeper to make them effective.

The liability to crush bees on the rabbets is, in this frame, reduced to its minimum, there being but *one* very small point to be guarded.

The cost of bearings, *F*, is less than any other attachment, as they can be furnished ready cut, strengthened, trimmed, pointed and packed for about 15c. per hundred; and added to a frame as easy as to drive a nail.

From the present demand for these bearings, I am inclined to believe that others fully appreciate them as soon as they learn of their use; hence, furnish the foregoing description. E. KRETCHMER.

Coburg, Iowa.

[We have a small model of these pivot frames, sent by friend Kretchmer, for our Museum. They are simple, strong and cheap, and for those who desire metal-bearings, that the bees cannot fasten with propolis, are quite desirable.—ED.]

For the American Bee Journal.

Comb Foundation, Marketing, &c.

The season of 1877 was very good in this vicinity for early honey, but the drouth of last August cut off nearly all the late harvest. I extracted 3,556 lbs. from the upper story, only, of 26 colonies; 41 colonies produced 1,064 lbs. of choice comb honey, in sections and glass boxes. I sent 12 lbs. of yellow wax to J. H. Nellis for comb guide, and received a nice article in return. I would not advise ordinary bee-keepers to make their own comb guide, when it can be bought for much less than when it is manufactured on a small scale.—I used to think that artificial comb guide would injure the market for comb honey, but now I do not believe it will, if properly used. I sold nearly all my honey in the home market, and could have sold, at least, 2 barrels more. I am in favor of selling more honey to wholesalers, that it may become a staple article in all markets.—However, if wholesalers cannot find a demand for the vast amount of honey now produced, and it remains dull, on the hands of the retail dealers, then we must sell more at home.

Mr. Editor, I fear there is too much *hive* honey disposed of for the welfare of our market. If bee-keepers will try and produce a better article, they will find the demand stronger. Thus, when conditions are as they should be, let the brood chamber alone, and obtain surplus honey from proper surplus arrangements above. It is a mistaken idea that dealers will invest in anything that can be taken from a cluster of bees. Something *more* than a *mere* semblance of honey is required. Hence, it is very important to obtain honey in a higher degree of perfection than a large portion of it generally is.

Extracting surplus honey from the brood chamber should be discouraged, for two reasons:

1. Because it is an injury to the colony.
2. Such honey is seldom a No. 1 article.

Obtaining comb honey from the brood chamber is rather to be discouraged, as slow comb building and fiilng early in the season gives the general appearance a yellow color. It being in close proximity to the young bees, and where so much pollin is constantly stored and consumed makes this mode objectionable.

Two or more kinds of honey should *never* be put in the same cask, where each original flavor cannot be retained. All recepticles, even new, should be well rinsed with pure cold water, and well dried before using; and either extracted or comb honey should be stored in cool, airy rooms, free from impure air.

I think colonies are generally allowed to increase too much, for profit. More honey might be obtained, with less expense and anxiety on the bee-keeper's mind, during the critical part of the season.

It is a splendid country around here for honey, but the winters are too cold and changeable for successful wintering out of doors.

White clover is plenty, and the basswood abounds almost everywhere, but the heavy rains have retarded the honey harvest materially. Strong colonies had their boxes full of bees, and up to June 5th had some honey capped. EDWIN PIKE.

Boscobel, Wis., June 15, 1878.

Portland, Oregon, May 1878.

"Thanks for your Honey pamphlet. I consider it one of the best things out."

T. BRASEL.

For the American Bee Journal.

Things in General.

DEAR EDITOR: You will recollect my being at your office this spring, as you was about to depart for the Burlington Convention. I must say I was well paid for my visit to the AMERICAN BEE JOURNAL office. It is worthy of a visit from any one interested in the science of bee culture. We need just such an establishment; and it is for the interest and well-being of apiarists to support and maintain such. We hope that friends Newman will not cease in their efforts to advance the science of apiculture. There is much to be done yet, and one item of special interest is marketing. We must establish a home market; create a demand at home, let our neighbors know what good honey is; and not let our home market be monopolized by old fogies who deal in a conglomeration of wax, pollen and honey. All progressive bee-keepers should take the AMERICAN BEE JOURNAL, read it and grow wise; they will never regret it.

After leaving your office I went to my old home in New York State; I then departed for Michigan in search of better pasture and locality for keeping bees, and am well pleased with this section of the State, for it abounds in white clover and raspberries. And I am informed that bees obtain honey very plentifully in the autumn, but from what source I am unable at present to say.

As an illustration, I will give you the product of friend Bidwell's apairy for 1877. Beginning with 17 colonies, he increased to 34, and obtained a surplus of over 2,000 lbs. of comb honey. Mr. Bidwell came to Michigan some four years since from New York state, and started with one colony of bees, buying another one also the second year. He uses the vertical-bar hive, and strange to say is not in favor of the movable comb. Mr. B. uses sections of 2 lbs. each, made of two pieces of ¼ inch pine, about 6 inches wide, 12 inches or more in length, divided into sections with strips ⅞ inches wide of same stuff, a groove being sawed every two inches in the 6 by 12 inch pieces. These are easily split off as required, forming neat sections of about two pounds each.

G. A. WALRATH.

West Bay City, Mich., June 11, 1878.

For the American Bee Journal.

Sad History Repeated.

FRIEND NEWMAN: Perhaps you remember my writing to you last fall, telling you the past season had been the poorest I ever saw, and expressing my fears about wintering, &c. You wrote me you hoped my fears would not be realized; but they were, and fourfold, too. Out of 104 colonies, I now have but 26, and some of them very weak. One hive that swarmed 4 times last summer is among the strongest, and it has been my experience that hives that swarmed 4 to 5 times often come out among the strongest the following spring. You see that I am not a believer in the theory that bees swarm themselves to death. They sometimes lose their queens on their fertilizing tour, and it as often happens with those that swarm but once or twice as otherwise.

I started in the spring of 1877 with 78 colonies, and most of them very strong. They commenced in the boxes earlier than usual, but the drouth in May caused white clover to be scarce, and when in June it commenced to rain, it invariably cleared off cold; and this was kept up till after basswood bloomed. In fact, the bees were killing their drones when it was in full bloom, and soon after the weather came off dry and very hot. Goldenrod came into bloom the last of August, and on the 30th a hive on the scales gained 1 pound. On the 31st, it commenced to rain and was cold, and they did nothing for 12 days, then they gained about 7 pounds in 6 days; then it came on cold again, and that was the last. I suppose about $200 laid out in sugar for them at that time would have kept about 100 colonies active; but the $200 to spare was what was the matter. Some have lost all, and some but about half. One man told me he started in with 21 last fall, and came out this spring with 3 only; while some men within 10 miles of us wintered with small loss.

I have concluded that having the eggs all in one nest don't pay, especially in a bee-hive in this locality, consequently, have sold my house and lot for $2,000 (and my neighbors all say at a sacrifice of $500), and intend to lay out the money in a small farm, and keep sheep or some other stock, as I am not able to do much work, and may keep a few of the pets, if where I settle should prove to be a good locality.

Can any of our friends inform me about East Maryland. I see farms are advertised as cheap there, and as I think a milder climate will be better for me and two of my children, I intend to go and see the country, and may visit friend Porter, at Charlottesville, Va. He tells me bees do well there. But I have never heard as to the prosperity of bees in East Maryland. My first swarm came off yesterday. H. B. ROLFE.

Westfield, N. Y., June 8, 1878.

For the American Bee Journal.

Moore's Section Boxes.

DEAR EDITOR:—I have been expecting for some time past to send you one of my section boxes as I use them, but I have been so very busy with the bees, and for them on account of being hindered in building a honey house, that I have had no time for anything else.

As fast as the sections are removed from the cases on the hive, glass is adjusted to edges of uprights and the caps put on, making a tight box very quick. If it should be necessary to open the box at any time before shippment, the caps are slipped off and readjusted with very little trouble. Before shipping, the caps are removed and a very little warm glue is put on with a brush causing them to adhere to the sections making a perfectly tight box.

For shipping, I use crates holding 1 doz. boxes, setting them in 2 rows glass to glass, the rim of cap preventing any breakage, making a perfectly safe package for shipping long distances, and a neat and most

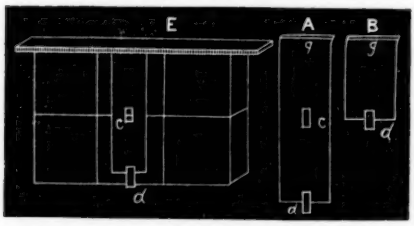
attractive package on the counter. I had some caps made with narrower rims (some ⅜ and some ½ inch) than sample, but I think sample size shows best.

I am making sections this season 2 inches wide, and the uprights only 3-16 thick.

You inquired as to how I used separators. I did not use them last year; sold our honey cased up in about an equal number of one and two-comb boxes.

In referring to caps I should have said, they are made to accommodate any number of sections, making as large or small a box as one may desire.

We are using separators in all the cases this season. We use both side and top cases. Side cases are 15x12x4 inches, inside measure, holding 12 sections 5x6 inches, top cases 15x10¼x6, holding 15 sections.



Above is a sketch of separators, also side case of sections with separator in place. I use tin 12x12 inches, cutting those used on side cases 12x4 inches, and those for top cases 5⅝x4. *A* represents separator for side case, with end (*g*) turned over ¼ inch at right angle with balance of strip at top. Slots are cut in tops of cases (*E*), and separator (*A*) slipped down between sections, strip (*d*) holding in place at bottom, and resting on on flange (*g*) at top. There is also a slot (*c*) cut so as to allow a passage for bees at bottom of top, and top of bottom tier of sections. These side cases are set down on bottom of hive between division board and side wall of hive. In top case I use 15, one to each section, they hanging by flange at top, same as those in side cases.

I send you a box filled last season, charges prepaid. Yours, truly, J. E. MOORE.

Byron, N. Y., June 18, 1878.

[Thanks, friend Moore, for the boxes.—They are very nice, and the idea is excellent. Easy packing, safe transportation, and attractive packages are the points to recommend any plan of marketing, and yours have all these points of excellence.—The "caps," friend Moore speaks of, are made just like paper-box covers, and pass over the box and glass just in the same way, both at top and bottom. Any size of sections may be treated in the same way. —ED.]

For the American Bee Journal.

Wiring Comb Foundation.

I see the cry from all quarters is: "Sag, sag, sag." I, like many others, discarded it a year ago, till some improvement was made to remedy this.

Last winter, as I was having my "winter dream," for all bee-keepers know what "winter dreams" are; we dream all winter long, about what big things we intend to do the next summer. Well, this is one thing I dreamed, and have been practicing it this summer with great success. Before nailing up the frames, I punch about 4 or 5 holes in the end bars. Then after they are nailed, run No. 26 wire across the frames 4 or 5 times, then place the foundation in the sun about one minute; then lay it in the frame, run a gum rubber over it, if you have one; if not, press it down on the wires with your fingers. This presses the wire into the foundation, and it remains there like a charm. Take a small brush and fasten to the top bar, as has often been described.—Place these combs in the centre of strong hives; and use them in new swarms.—Shade or no shade, but "never a bit will they sag." And after they are built, if "Mary Ann" should happen to drop one, there would be no reason for "getting up on your ear," for they would not break.

D. S. GIVEN.

Hoopeston, Ill., June 21, 1878.

For the American Bee Journal.

Cyprians.

Judging from correspondence received, there is much interest awakening in regard to the introduction of this new variety. We are often asked to state the difference between them and the Italians—how their hybrids behave and work; whether they are superior to the Italians in gathering honey; their ability to winter without spring dwindling, docility, etc., etc.

A portion of these inquiries we are able to answer; concerning others we are in the midst of experiments and do not care to draw upon our imagination, or venture an opinion until we can do so with some degree of certainty.

The points claimed for the Cyprians are that they equal the Italians in all desirable qualities, and surpass them in prolificness and ability to winter with less loss.

In appearance the workers closely resemble the Italians, but are lighter and handsomer. The upper and posterior portion of the thorax has a broad yellow margin, which readily distinguishes them. The queens we have thus far received or raised do not have the upper side of the abdomen as light as the average Italian queens.

These bees have been described as being longer and slimmer than the Italians, we however do not find this to be a noticeable feature. The comparative length of the tongue will be determined by Prof. Cook, who has kindly offered to make a careful microscopical examination.

In docility they equal or excel the Italians. The comb having the queen thereon may be taken from the hive, and the queen will tranquilly continue her laying, the workers adhering to the comb with great tenacity.

The queens are exceedingly prolific and fill the comb very evenly with eggs, seldom skipping cells. We found sealed and hatch-

ing brood the first of December, and when examined the first of February, the combs were well filled with eggs and brood. On the first of April no stock in the yard was more populous.

As we had little or no trouble with spring dwindling this seassn no comparison on this point can be made.

Any points of superiority or inferiority we may discover we shall announce through THE JOURNAL.

We have experienced great difficuly thus far in obtaining bees from the island alive. We look for the arrival of an importation early in July, and as they are to be sent according to our directions, we expect to receive the greater part, if not all of them, in good condition.

We consider the Cyprian a higher grade bee than the Italians, and think they are destined to be a popular variety.

Will not some one import the Carniolan bee and test its merits?

C. W. & A. H. K. BLOOD.

Quincy, Mass., June 20, 1878.

For the American Bee Journal.

"Floating on the Stream of Time."

FRIEND NEWMAN:—I left New Orleans May 18th, with 61 colonies of bees; all except two or three very strong with bees, and two-story hives. I closed the hives on the 17th, the weather being quite warm all the time. I stopped at this point the 24th, at 6 p. m., deeming it unsafe to keep them confined any longer. I found them very restless after the fourth day. My bees are on the bank of the Mississippi River close to the water. Bees have been doing well here this season. I was too late, as the season is three weeks ahead of the usual time. I stopped to rest my bees, and will remain about ten days. The weather is quite wet here; plenty of white clover now and some persimmon. I have been inquiring about the country between Cairo and St. Louis. Some would say one place and some another, and the truth is, no one not a practical bee-keeper is to be relied on, for they don't know. I passed a fine place and stopped here, but I shall try the Illinois River next week if health will permit. I wrote several bee-keepers about localities, but only two responded—friends Palmer and Mr. Riehl of Alton. It is the first undertaking of the kind, and what success there is to be will depend upon the season, as it does at all times.

The floating apiary of Mr. Perrine started from New Orleans the 14th inst., and I passed her tied up sixty miles above New Orleans on the 19th. At that rate it will be some time before Cairo is reached. Comparing it to my own trip, I don't see anything to encourage its owner. Every one on the river has heard of "that 2,000 hives coming up the river." When the boat, (James Howard, which I was on aboard of), came along with bees there was some excitement. All asked if it was that great floating apiary. Captain O'Neal would tell them it was the "Flying Apiary," and he had it on board to amuse his passengers. If Mr. Perrine succeeds I am sure of success, for I have superior advantages. But I know I will not overstock the honey market in America, and Mr. Perrine has no greater show to supply "all Europe."

W. B. RUSH.

Wittenburgh, Mo., (opposite Grand Tower) May 28, 1878.

[We understand that Mr. Perrine had an accident; something gave out on the steamboat, and he had to return to New Orleans with it to be repaired, leaving his "Floating Apiary" 60 miles up the river. We understand that it is now *floating* proudly along, (behind the steam tug), and will put in an appearance in due time, if nothing unforeseen prevents. Dr. Rush is *now*, June 20th, at Pekin, Illinois, and reports his bees in good order, gathering rapidly. So much for floating apiaries.]—ED.

For the American Bee Journal.

Bee Notes from Georgia.

I inclose a specimen of a plant that I think is Melilot Clover. I discovered it accidentally. Had no idea there was such a plant in this part of the country. I think with it we can be certain of a honey crop, and a large one too, if it continues to be as good as it is this year. I have never seen bees as fond of anything as they are of this, and it has such a profusion of bloom, and I am told it blooms for more than a month. It stands about 8 feet high and is covered with blossoms. I held it in front of a hive, and in less than five minutes there were a half a dozen of bees as busy as they could be. I visited the field in which it is growing, and I don't think I ever saw as many bees working on one thing; the whole air seemed to be filled with them, and the plants alive with them.

My bees have not done as well this year as I anticipated, on account of the cold, damp weather during May. We lost two weeks of sour-wood bloom; the bees are busy working on them now, at least what are left of them, and will get a little honey. If we have a honey-dew we may come out all right yet. I am afraid it is rather late.

Speaking of honey-dew reminds me of a circumstance that happened a few years ago in connection with honey-dew; and while they are now discussing it through the JOURNAL, some one may be able to explain it. It was this: A few years ago our Sabbath School determined to have a social gathering of the different Sunday Schools in the neighborhood; so on the day appointed, the 20th of May, as near as I can recollect, there assembled with us about 1,000 people, and some horses of course. We all had a very pleasant time, notwithstanding the day was rather warm. But it all passed off pleasantly, and all went away well satisfied, and it seemed that the little busy bee was to be satisfied also, for strange to say, next morning the trees under which the crowd had spent the day were literally dripping with honey dew; and the strangest part of it all was that no where else in the

large grove covering 20 or 25 acres, could any be found. I can't explain it, and would be glad if some one who is better versed in these things would do so.

I have one hive that has done well this year, I have taken 50 lbs. of comb honey from it alone. JAMES F. HART.

[The plant is Melilot clover. It is excellent for bees in any locality and grows on any soil and in any climate.]—ED.

From the Detroit Tribune.

Bee Culture in Northern Michigan.

The lands in the above region are quite various in their character, as is shown by the timber, which in some places is scrubby pine, the trees thinly scattered and interspersed with oak, while in others it is a tall, straight, very thrifty—really beautiful growth of beech, maple, elm, white ash, basswood or linden, etc.; again thick forests of hemlock and cedar, dark and somber, are to be seen, or the ground is very closely set with massive white pines, arrow-like in straightness, waving their tall tops in the fresh breezes that blow across the great inland seas lying on either side. Large districts formerly covered by pine timber have been burned over and then occupied by a close growth of raspberry and blackberry bushes and small poplars, furnishing large supplies to the industrious bees, so that from many a region that appears almost worthless, and is now very desolate, an abundant and delicious store of nectar might be obtained.

To the question: "Where do your bees get so much honey?" An old bee-keeper living in a sandy pine region lying adjacent to Lake Michigan, jokingly replied: "I guess they get it out of the pine knots and stubs." This apiary is located a few rods from the water's edge, hence the bees have only a half range, yet they collect an abundant supply of honey for themselves, and, on the average, a generous surplus for the owner, the sources being the willows, poplars, early wild flowers, maples, fruit-bloom, clover, wild raspberries and blackberries, buckwheat and autumn wild flowers, such as fire-weed, golden rod and asters. The soil in sections where pine timber grows, is sandy, very light, and generally unproductive, though rye, buckwheat, and near the lake shore, fruit can be raised successfully.

It is in regions where the growth of timber is composed of beech, maple, elm, white ash, linden (basswood), with some ironwood and oak interspersed, that all sorts of crops raised in Michigan thrive astonishingly well, and that the apiarist finds his labors abundantly rewarded. Should the section lie within twelve or fifteen miles of the shore of Lake Michigan, it is especially adapted to the growing of all kinds of fruits. Tender fruits do not succeed so well inland, as the frosts are more severe. The soil where hard timber grows varies from a stiff clay to a rich, warm loam. The latter with a clay subsoil is most productive. The stumps rot soon and the labor of breaking up and tilling is not so great; it does not leach, nor does it show the effects of drouth as soon as the heavier soils. Roots, grains, hay and fruits succeed admirably. A yield of 30 to 40 bushels of wheat to the acre is often obtained. The snows are so deep that the ground rarely freezes; and near the lake shore the climate is much milder than that of the southern portion of the State. The vast amount of lumbering, fishing, shipping and settling going on furnishes a ready home market for all sorts of supplies, stock, etc., while railway and steamboat lines place the greater portion of this region in close communication with large cities.

For the apiarist these hard-timbered sections are particularly inviting, because the immense forests of linden, with large quantities of raspberry and blackberry bushes, and, in the fall, acres of fire-weed, golden-rod and asters furnish pasturage that cannot be excelled. The most beautiful and finest flavored honey the writer ever saw was produced in central Oceana county from the blossoms of the wild raspberry. The honey from this plant is very clear, sparkling, thick, remains liquid a long time, and possesses a very delicate and agreeable flavor; the yield is also extraordinary. The great linden forests send forth a rich perfume from their millions of tassel-like blossoms, which appear during the early part of July, and then the bees have a royal feast, the yield in good seasons being enormous. A neighbor secured an average of nearly 200 pounds of honey to the hive for several seasons in succession, obtaining at the same time a rapid increase in his stock. One of his hives yielded him 526 pounds of liquid honey in one season. The success of the writer in Northern Michigan has tempted him more than once to return to this portion of our State from which other considerations called him. FRANK BENTON.

For the American Bee Journal.

Honey Rack and Separators.

We who are putting up honey to ship must use the separators. How to do it is doubtless a vital question with many. After much experimenting I think I have made a desirable Rack. I wished one that would combine the following points, some of which Dr. Southards's supply, and some Mr. J. P. Moore's.

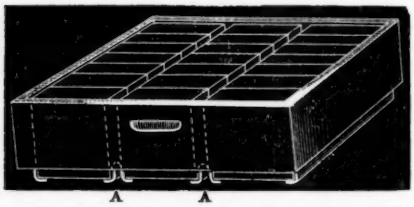
First—It is desirable to have the sections lengthwise over the brood-combs; for if across they are often built the other way.

Second—To have sections that will or can be used in wide Langstroth frames suspended and the size 4¼x5⅜ does meet this, and then use separators to match, as many of us are doing.

Third—A Rack that will fill the Langstroth hive and admit a separator of wood or tin, without fastening, except as all are wedged up and yet be bee-tight and tier up readily without vacant space between the tiers.

Now all are not agreed as to the superiority of wood over metal separators, claimed by many. With me it is a question of economy, as I use my grape box veneer, such as I make boxes from. No glass, and no fitting of separators, if cut right. I will here give a description in full. I first used

sheet iron, but tin I find strong enough for three tiers deep and more easily cut and formed. There is no projections above or below and they tier up bee-tight. The object is attained 1st, of using sections lengthwise; 2d, of the least possible surface for propolizing; 3d, using only a few long separators, costing a trifle only; 4th, of tiering up bee-tight; 5th, to use same size section as in wide Langstroth frames.



Sides ⅝ thick and full width of 3 sections and 17¾ long. Ends ¼ thick and full width of sections and ⅛ less than width of hive and nailed on to sides. Mine are 14¼. The end supports are angle tin ¼ in. bent at right angles and tacked to ends strongly. The two middle supports A, A, are made of tin bent so as to be ⅛ in. apart, and to stiffen, insert ⅛ strip of wood. I tried both sheet iron and tin, but find the tin, if good, strong enough to support three tiers. These are fastened by a nail through the side; two nails may be used. The wood greatly supports and stiffens the arch.

The rack rests on two V shaped strips across the brood-combs. As the middle rests are ⅝ deep the separators have to be matched ¼ inch and they rest directly on the middle support and are in place.

Permit me to say good oiled cotton cloth is a cheap material for summer quilts. Brush on boiled oil on one side of stout brown sheeting, first well dampened, as sailors oil their clothing. I am trying it. Bees will not gnaw it I think, and it will be tight.

J. W. PORTER.

Charlottesville, Va., May 20, 1878.

[This Rack, which friend Porter has so kindly made drawings of for the JOURNAL, is intended for "tiering up," as well as to be used in single story on the hive. It came too late for the June number, or would have found a place in it, so as to make it of more value at this season. The cut will give a good idea of the Rack. The middle and end supports have been used by J. Oatman & Sons for a year past, as well as some others. As many are inquiring for a Rack to allow of "tiering up," this will be interesting, though we think that idea not so important as getting our surplus honey in desirable shape for marketing.]—ED.

For the American Bee Journal.

Items from California.

On Feb. 1st I had 18 colonies, 3 of which were Italians (1 imported, 2 home-bred.) I have now 31 good colonies Italianized; brood is hatching and hives filling up fast. I had no black drones; swarming so far, artificial. I had several young queens to swarm several times, but none to go away that I know of. There has been some mixing of queens; one to-day got out and mixed with another swarm; the bees nearly deserted their hive, even with eggs and young brood just started. I saw the queen, but thinking her not mated, or not sure, let her fly (the bees coming out furiously), but the colony went into another hive; I examined but did not find her, but the other queen was all right. I found a nucleus to-day without bees or queen, although they had a laying queen a few days ago and plenty of room. Somehow I have lost a good many young queens; I think mostly by bee-martins; though I have found several outside of the wrong hive, dead. I had one hive to swarm out and return three times. Previous to this they had a light colored queen; since, they have a dark one. I have had to replace quite a number of queens that were lost.

This has been a good season for honey, though in re-queening I have lost part of its benefit. Shall have to use the extractor soon. I expect to be able to use foundation for comb, but delay in its arrival, have had to let bees make their own comb. I have introduced laying queens by smoking and shaking queen in front, letting her run in; also by smoking and shaking all bees from the combs and then shaking queen with a frame full of bees right among them; then putting combs in place and closing hive, in each case with success. I had a number of dollar queens last season from the East, but my imported queen is the cheapest; so far she has beat them all. Most of my young queens are from her. I think dollar queens poor investments. I had 5 of one party; 2 of two; 3 of one, and 2 of another. I have only 2 left and one of them has to be built up. I shall try imported queens this year. My last swarm transferred in January, filled their hive first and went into sections before others that seemed to be in better condition. Hives are mostly Langstroth. I don't pretend to be an expert in transferring, but I can beat the sticks or Novice's clasps. I use wire No. 16; first bent down one end ¼ inch; then bend down to fit width of top bar of frame; then to fit depth of frame; then to fit under bottom bar the width of bottom bar; then some pieces bent four square, with the ends nearly meeting. These go on ends of frame, the points or ends of the wire fitting into the cells and spring together. They do not take so much room as sticks; bees do not mind them so much; there are no strings to bother; they are removed by pulling out bottom and slipping off the top. If they are made to fit snugly, they make neat work; the lower part keeps the bottom bar from sagging. One set will last forever if the frames are all alike. I use up all pieces; with these it makes no difference whether full of honey or not, or how warm

the weather. I raise my queens in nuclei of 3 frames, same size of hive; have three such of five apartments; shall make 2 more, so as to winter about 25 extra queens.

Napa, Cal., May 6, 1878. J. D. ENOS.

From the Michigan Farmer.

Spring Feeding of Bees.

In this locality the white clover harvest has fairly commenced, but it is rather late this year on account of the cold, stormy weather, which has prevented bees from profiting by the early spring flowers—fruit bloom, &c. It is very seldom that a season occurs when spring feeding proves as necessary as it has been this year. Real winter weather disappeared quite early and there was every appearance of an early opening of the working season; under such circumstances, strong colonies of bees, especially those containing considerable honey, always start large quantities of brood. It only needs a few bright, warm, spring days to enable the bees to take one or two cleansing flights and get fresh water and new pollen, as well as put their hives in order, and they will go forward rapidly with the brood-rearing, which is generally commenced before winter is over.

It takes large quantities of honey to prepare the food for the young larvæ, as well as to sustain the rapidly increasing population of the hive; hence if cold, stormy weather ensues, the bees may be obliged, as a precaution against starvation, to discontinue brood rearing, or even to remove the undeveloped larvæ from the cells, and, if very short of provision, they will, in desperation, tear the pupæ from the cells; then comes desertion of the hive, or starvation, unless the bee-keeper is on hand to avoid such a catastrophe by liberal feeding.

There is great danger of this result if feeding has been commenced and then discontinued, for the additional brood the bees are induced to start must have food.—Such a case should not occur, however, and the bee-keeper will always find it to his advantage to secure early and constant brood-rearing, by feeding up to the time the harvest commences, or until the bees are able to find honey enough in the fields to enable them to keep up a large supply of brood.

Some have claimed that spring feeding, by deceiving the bees into the belief that honey could be found in the fields, induced them to fly out when the weather was unsuitable and thus to perish, materially weakening the colony instead of increasing its population. Such may often be the result if they have access during the daytime to honey or any liquid sweets placed in feeders, but if combs containing sealed honey are placed in the hive and a small portion is uncapped just at nightfall, or if the feeders are supplied only at dusk, and no more food given than the bees can remove during the night, no such result need be feared. This plan avoids danger of robbing.

The writer recommended these methods last spring, and a recent examination of a large number of colonies of bees in various apiaries adds more testimony in favor of them. These stocks that have been fed regularly during the recent unfavorable weather are now strong in numbers and are profiting by the present harvest, while others that have received no attention and that barely had honey enough to carry them through are not as strong or no better off than two months ago. Others that had considerable honey but that were not stimulated are not in good condition now.

The sole care of the apiarist up to the time of the real harvest should be to rear as much brood as possible in every hive. To this end the combs should be so arranged as to give regular worker cells near the center of the hive, the hive should be tightly closed above and the entrance made small so as to retain the heat, and the bees should be stimulated by a frequent supply of food. This idea that only strong colonies of bees are profitable cannot be too thoroughly impressed upon the minds of novices.

FRANK BENTON.

For the American Bee Journal.

Foul Brood.

Bees came out in the spring mostly weak; they commenced gathering about March 10, and continued until April 22. We had some heavy rains and honey failed; they again commenced gathering May 1. I have increased about 50 per cent. I have some strong colonies that have gathered from March 10 to April 22, about 50 lbs. of honey each.

I have had 85 colonies with foul brood in the last 12 months. I have lost but 6. I have cured 60, and I am now working with the balance. The way I do is to take out the queen, spray the combs and bees with salicylic acid and borax without uncapping. (This is Mr. C. F. Muth's remedy of Cincinnati, O.) Then in about 5 days after I give them a queen cell or let them raise a queen. I try to have a laying queen in the hive before 21 days. In 21 days from the time I took out the queen, I go back to the hive and uncap all of the foul brood cells, and spray the combs and bees with the remedy. It is best to extract the honey, then spray the combs and bees, for I had three cases to return, but those were very bad cases. By spraying the combs and bees when I take out the queen, I have but very few cells of foul brood that has not been cleaned out at the end of 21 days.

The way I prepare the remedy is to take 128 grains of salicylic acid and 128 grains of borax, and put it in a bottle and add 2 ounces of rain water and ½ ounce of alcohol; then shake it up well, let it stand about one-quarter of an hour, then add 14 ounces more of rain water, and shake well again.

Waterloo, La. L. LINDSLY, Jr.

[The best way to apply this remedy is by using an atomizer, which sends a very fine spray over the comb and bees. Such is illustrated on page 212, and can be obtained at this office.—ED.]

Our Letter Box.

Borodino, N. Y., June 11, 1878.

"I have been obliged to feed 1,500 lbs. of honey and sugar syrup, to keep my bees from starving, and I fear the end is not yet. Rain, with high winds and frost every few nights being the cause."

G. M. DOOLITTLE.

Augusta, Maine, June 12, 1878.

"The weather is cool, and prospects are poor for honey crop. I fear white clover will not yield much honey, though it may be too early to tell how it will come out yet. God speed the AMERICAN BEE JOURNAL."

ISAAC F. PLUMMER.

Hastings, Minn., June 7, 1878.

"Sickness last summer prevented me from attending to my bees, and I sold off nearly all, last fall. I have now built up the remainder to over 50 colonies, and hope, health permitting, to have a good report of this season if Mr. Perrine's 2000 colonies do not come up the river and appropriate all our bee pasturage. We wait patiently for his report. It is a great undertaking."

WM. DYER.

Carson City, Mich, June 13, 1878.

"In this part of Michigan, fruit is all destroyed, crops of all kinds are badly damaged, and worse than all, it is freezing about 2 nights in each week. We had 3 fine days early in this month, during which time our strongest colonies of bees stored 40 lbs. of honey, in sections; comb was furnished to nearly all of them. Since then it has been so cold that they have quartered down below. Honey was gathered from the red raspberries." HIRAM ROOP.

Crystal Springs, Miss., June 6, 1878.

"I have about 50 colonies, probably about one-half in tolerable condition. Fully three-fourths are pretty Italians. They built up and gathered rapidly during fruit-bloom; and with but few exceptions, they ceased to raise brood immediately after that, and dwindled considerably. But for the past 10 days they have been gathering well. Some are averaging 10 to 20 lbs. per week of extracted honey, and some are storing in boxes."

JESSE R. JONES, M. D.

Oquawka, Ill., June 14 1878.

"I noticed a slight mistake as to date of our last meeting, it should read October 2nd and 3rd, instead of October 12, as printed. Please correct in the next number of the JOURNAL.

Bees are doing finely in spite of the almost continuous rainy weather; some new swarms, and they are building new comb. Could we but have fair weather, things would go ahead with a *rush*. Bees are working this morning with a tremendous power.

I can nail together 1000 Prize Sections in 10 hours work, with my spring section mold. Who can beat it?" WILL M. KELLOGG.

Eugene, Ind., June 10, 1878.

"The honey season is backward here this spring. We have had a cold rain for the last two days. Unless the colonies were strong they have not done much more than just gather the honey as fast as they eat it. There have been but few swarms here, so far." H. H. HARTFORD.

Des Moines, Iowa, June 11, 1878.

"One good swarm April 25th, and 8 more before the middle of May, all from 7 colonies, and fed from last year's stores, wintered over with the bees in the hives.—Have not fed over 10 lbs. of sugar since Nov. 1st, and that wholly for experimenting. Shall feed for a few days now, as the flowers seem to secrete no honey."

J. M. SHUCK.

Wethersfield, Conn., June 19, 1878.

"Clover is at its best—yet the weather for the past 10 days has been bad—cold, cloudy or stormy almost all the time; still, as a whole, my bees have done well up to this date. As usual, some are doing little or nothing; others extraordinarily well. I have had no swarms yet, and do not want any. My neighbors have, especially one particularly smart one, who has had 3 from one hive, and gives this to show that his bees are managed better than others. Oh, yes, he is *very* smart, but if I can make mine stay at home and attend to business *I* shall be satisfied." F. J. SAGE.

Vermont, Ill., June 14, 1878.

"On account of failing health, I have sold most of my bees (Italians and Hybrids), and will fill no more orders until further notice, keeping only a few colonies of my Cyprian bees to employ my leisure time. Having been stung considerably during the past year, I am advised by physicians that my constitution will not endure so much poison, and am compelled to abandon bee-keeping on a large scale. I have handled bees for the past 10 years, buying my first colony of bees at the age of 9 years, of Mr. Abe Arthur, of Good Hope, Ill, now near Scottsburg, in the year 1868. During the last 2 years I have given value received and made all losses satisfactory. Thanking all for their patronage, I wish them success in bee-culture. HARDIN HAINES.

Mt. Gilead, O., June 3, 1878.

"I took the BEE JOURNAL for several years, but last year I felt too poor to take it—but I believe I am poorer now than I would have been if I had continued to take it, so I renew again, and think I can get up a club here. Since April, bees have done poorly. May was a poor month for them.—I wintered 30 colonies on their summer stands without loss. During April, while the peach and cherry bloom lasted, they gathered honey and pollen fast, and increased rapidly. In May they destroyed their drones and some of the worker brood. They are not as strong now as they were on May 1st. They are doing well now on white clover. Many bees in this vicinity starved. I am impatient to get the JOURNAL to learn how they have done in other localities." JOSEPH TRUAX.

Rome, Ga., May 15, 1878.

"The Italian bees commenced to swarm on March 15, and swarmed rapidly up to April 25. Black bees commenced to swarm in this section, April 12, almost a month's difference. Some swarms have cast 2 swarms, and have already given over 40 lbs. of fine honey. This spring has been an exceedingly fine one.

"The honey season opened finely, and during March and April was good. Since then we have had only a medium supply for the bees; this enabled them to breed rapidly and swarm tolerably well. The prospect now for the South is rather poor for a large crop. Those having good honey for sale, may rest assured of obtaining a good price." A. F. MOON.

Embarrass, Wis., June 4, 1878.

"I packed 5 hives in a box, with chaff 1 ft. thick all around and over, with an entry 11x3x1 ft. in front. The rest in my extra-dry room in the cellar. The result was, my bees all came out strong, and not a quart of dead ones on the cellar bottom. Those out of doors lost scarcely any, and were very strong. I had swarms April 29, May 1, 7, 13, and 24. The earliest I ever had them before was June 22. Chaff packing *this time* is far ahead. No swarms yet, from those wintered in cellar. I think I should have had, were it not for the killing frost of May 13. Colonies wintered out of doors have killed drones. Those wintered in the cellar have not. They must swarm soon, I think. White clover has commenced blooming a little." J. E. BREED.

Garrettsville, Ohio, June 10, 1878.

"Like many others, I have to complain of unfavorable weather for our pets—the bees. Spring opened very fine and brood-rearing was far in advance of the usual season. Then followed 20 consecutive days, with more or less rainfall, followed by frosts and cool weather. Swarms, that were apparently about to issue, killed their drones and did but little more than consume their stores. White clover appeared May 24th, and since that date they have been permitted to work about two-thirds of the time. I have nearly 40 colonies, and the best of them are now storing surplus, the others nearly full, but not in the boxes yet. White clover is more than usually abundant in this vicinity, but, so far, it has not afforded much honey. Raspberries are plenty, and have had their almost undivided attention, but they were much injured by frosts." WARREN PIERCE.

Strait's Corners, N. Y., June 10, 1878.

"Thanks for the Emerson Binder and your pamphlet on "Honey as Food and Medicine." It is just what the people should read. It contains so much valuable information that I shall distribute them largely next season. I wintered 24 colonies in the cellar; chaff cushion on top, and hive raised ¼ inch from the bottom board. I gave them a fly, March 8th, and set them back at night. April 15th, I put them on summer stands, all in good order, except 2 weak ones, which I lost in springing. I wintered 4 out of doors, in a large box, packed in chaff, with upward ventilation, and allowed them to fly at will. These are very strong. I had large swarms issue June 2nd, and June 5th. Apple bloom was destroyed by frosts; white clover is just coming in bloom. We had hard frosts on the nights of the 5th and 6th inst. I hope the weather will warm up now; if it does not, the honey crop will be light in this section. Upon May 15th, I saw about 30 bees waltzing about on the alighting board; upon examination, I found a young queen dead. I suppose the cause of her death was that a preparation to swarm had been made, and the bad weather at that time preventing the swarming, caused her to be killed.—Success to the JOURNAL."

ISAAC E. PELHAM.

Fayette, Miss., June 11, 1878.

EDITOR AMERICAN BEE JOURNAL:—"I send you a bunch of flowers and leaf from a tree in this place. Would like to know what it is, and its origin, whether trees could be produced from the seed, or cuttings of the tree. Some call it the "Varnish tree;" and the only one in this part of the country is now about 1½ feet in diameter, tall and bushy, limbs lengthy and drooping. It blooms twice a year, spring and fall; and is now one mass of flowers, in bunches, (as per sample), at the end of each sprig or limb. The body of the tree is dull green, very smooth and glossy. The leaf sent is not quite full grown, the tree holds bloom a long time, and its odor is something like the night-blooming jessamine. The bees are swarming on the flowers from daylight till dark; not only honey bees, but every kind of bee, wasp, yellow jacket, ants and numerous insects that love sweets. Do you think it produces abundant honey? It must do so, from the fact that every bee and insect seems so fond of it. The tree is perfectly beautiful." G. W. MCMURCHY.

[Prof. Beal kinkly gives me the following information: "It is *sterculia plantanifolia*. It comes from Japan. Perhaps it does not produce good seeds in the Southern States. If it does, the seeds will grow."—The plant is closely related to the mallows.—A. J. COOK.]

Woodville, Miss., May 18, 1878.

DEAR FRIEND:—Many thanks for your pamphlet on Honey. I'll warrant that no one appreciates it more than I do. I know it is too late for the book, but you can put the following into the JOURNAL:

COUGH CANDY:—Boil a large double handful of green hoarhound in 2 qts. of water, down to 1 qt. Strain, and add to the tea 1 cup of honey, 1 cup sugar and a tablespoonful each of lard and tar. Boil down to a candy, but not of the brittle kind. It is the very best cough mixture I know of.—Begin with a piece the size of a pea and go up to as large as needful.

HONEY COUGH CANDY.—It is made entirely of honey, but thick with walnut kernels. The dose is considerably larger, being quite as large as a pecan. Neither should be boiled to the point of brittleness, to better regulate the size of the dose

On March 25th, I noticed, while inspecting a hive, some *two or three* bees evidently hostile to the queen. I picked them out and killed them and hoped all the rest were loyal, seeing nothing else to the contrary; but the next morning, lo! there at the door was the queen *dead*. I cannot tell you how it distressed me. It was only about midday, and I could not think what either myself or the poor queen had done to anger the bees.

The colony that was trying to swarm the middle of the month made it out, I think, though I did not see them, but on the 25th I saw a young queen in that hive which had just emerged from her cell. I suppose I must have overlooked that cell when I cut out the rest. I forgot to notice when I saw the first drones, but there are lots now in some of the hives. The honey coming in now is delicious. ANNA SAUNDERS.

Clyde, Iowa, June 13, 1878.

"In answer to many questions—'What killed the bees?' I will say: Improper stores. During the winters of 1877-8, I lost 75 per cent.—cause, poor honey. A large proportion of those lost were blacks, while a large per cent. of those left was Italians. Does this not prove that the latter are more hardy, and that they procure better stores? They are more gentle, and for this reason alone I prefer them to the blacks."

R. ECKLESS.

Elizabethtown, Ind., June 15, 1878.

FRIEND NEWMAN:—"I see by last month's JOURNAL that you report 'universal cold and wet.' With us, it has been so; even now, June 15, we are having very cool nights, for this time of the year; and to make matters worse, it rains almost every day. White clover has been in bloom for several weeks, and has furnished but little honey. Bees are in nice condition, however, to work in boxes, if it only turns warm and dry. As the queens have had things all their own way, filling the combs full of brood from top to bottom, and bees are strong in numbers, they will have to store in boxes if there is any honey to gather." JOSEPH M. BROOKS.

Sherwood, Wis., June 7, 1878.

"EDITOR JOURNAL:—I send you a small twig from a willow covered with aphides, or lice. I also enclose some of the leaves with the 'honey dew' adhering thereto.—From close observation made by Mr. W. R. Bishop where these parasites were congregated in large numbers, we are satisfied that Mr. Chas. Sonne is correct in his assertions on 'honey dew,' in the June number of the AMERICAN BEE JOURNAL. When they were disturbed, the liquid could be plainly seen ejected by them, and with sufficient force to be distinctly felt upon the hand. The upper side of the leaves were completely covered with 'honey dew,' and the bees had been working quite vigorously upon them. We thought we would send you some of the genuine article for examination, if you should desire to do so and report." L. POTTER.

[Thanks, friend Potter, for the samples. They prove, pretty conclusively, that you are correct.—ED.]

LaPorte City, Iowa, May 16, 1878.

"Bees wintered well, consuming but little honey. They commenced breeding very early. On Sunday, April 28, I had a large Italian swarm. The Sunday following, a second swarm, and I don't know how many more would have issued if I had not removed the queens and cells. This is a good proof that the Italians are ahead of the blacks. Bee-keepers of Iowa, now let us hear who got the first swarm, and whether it was a black or an Italian swarm. I think that not more than 5 per cent. of all that were wintered in cellars have died.—With splendid prospects, bee-keepers are happy. May the JOURNAL ever prosper, and help the bee-keepers to solve the many mysteries yet hidden." L. L. TRIEM.

Great Bend, Pa., June 24, 1878.

"DEAR EDITOR:—Your very kind letter is received. We are happy to report favorably of the foundation machine you sent us. We have made a batch of very nice comb foundation. We made some wooden dipping plates, and like them much better than the metal ones. We use nothing but water and have no trouble about the wax sticking to the plates. We think we shall be more pleased with the machine as we become accustomed to its use. Our bees are doing nicely and drawing out the foundation in a beautiful shape. We are extracting some very nice honey." SQUIRES BROS.

Boone Co., N. Y., June 7, 1878.

"I am much pleased with the BEE JOURNAL. Many thanks for its enlarged size.—It is the largest and best bee paper published in the world. I never had any of those remarkably large yields of honey, &c., to report, that some do. My bees are doing as well as I can expect. The weather is very cold and summer backward. I should be much pleased if we could have a correct likeness, in the JOURNAL, of T. G. Newman & Son. I think it would give much satisfaction. It seems to be natural, when we read the JOURNAL to want to know how the Editors look."

D. L. FRANKLIN.

[Thanks, friend Franklin, for your good words and wishes. Our aim is to make the JOURNAL impartial as well as impersonal, and fear it would be considered by some rather pretentious for us to parade our *physical* appearance in it. It is the mind that makes the *man*, you know.—ED.]

O'Fallon, Ill., May 13, 1878.

"FRIEND NEWMAN:—You abridged my article in the May No. so much that any one would think I had only 23 Adair hives, all told, when I really have 65. The brood I spoke of was in Langstroth frames. I had a big swarm on April 30th, with 15 queen cells started in the old hive. I have had none since; it has been so cold, with occasional frosts, ever since."

C. T. SMITH.

[We are sorry if by abreviating we conveyed a wrong idea, friend Smith, and cheerfully correct it. With all our enlarged

space in the JOURNAL, nearly doubling its capacity, we are often too crowded, and have either to abreviate or omit entirely, especially during the months from November to June. We spend a good deal of labor to make the best of all matter sent in by our many friends, and it is not often that they have cause to complain, but we suppose it was an oversight in copying the article. But we know friend Smith will excuse us. We hope all our friends, who write for the JOURNAL, will act on the advice of friend Palmer in the April No., page 123,—to boil down their ideas as much as possible, and thus give *all* a chance to be heard. It should be remembered that the JOURNAL has now nearly twice as many readers as it had a year ago, and they all like to have their letters printed. So let all condense as much as possible, or we shall be obliged to enlarge again.—ED.]

Waterloo, Ky., June 14, 1878.

"Bees are doing well here, making large quantities of honey. The white clover is the largest crop that I ever saw in this county; we have had plenty of rain to keep it good for a month longer. I am well pleased with the JOURNAL. I could not well get along without it." R. L. AYLOR.

☞ The issue for 1878 of the *Newspaper Directory and Advertisers' Hand-book*, published by the world-known advertising agency of S. M. Pettengill & Co., 37 Park Row, New York, has just come to hand. For simplicity and convenience of arrangement, comprehensiveness of scope and general accuracy, we have long regarded this as by far the best and most reliable Newspaper directory published in the United States or elsewhere. It contains a complete list of the pewspapers published in the United States and the British Provinces, a second list arranged, for the convenience of advertisers, in counties; lists of the daily, weekly, monthly, religious, agricultural and specialist newspapers and periodicals, with full information as to character, circulation and proprietorship, and a list of the leading newspapers of Great Britain, Australasia and Europe. The volume is illustrated with portraits of Bayard Taylor, Geo. W. Childs and Brete Harte among living, and Samuel Bowles, James Gordon Bennett, of the dead journalists of the United States, while an excellent steel engraving of Mr. S. M. Pettengill appears as the frontispiece. An intesesting article on advertising, replete with hints drawn from long practicol experience of the subject, should make this volume specially attractive to enterprising business men.

PLANED PRIZE BOXES.—We have just made arrangements to cut out, ready to nail, Prize Boxes that are planed on the outsides. These we can box and deliver on board the cars for $8 per thousand. Those not planed we shall still sell for $7, as heretofore.

Business Matters.

TERMS OF SUBSCRIPTION.

Single subscription, one year	$2 00
Two subscriptions, sent at the same time	3 50
Three " " " "	5 00
Four or more, " " "	..each, 1 50

Advertisements will be inserted at the rate of **20 cents** per line of Agate type, each insertion, cash in advance. One inch measures fourteen lines.

Notice to Advertisers.—We intend only to advertise for reliable dealers, who expect to fulfill all their advertised promises. Cases of *real* imposition will be exposed, and such advertisements discontinued. No advertisement received for less than $1.

Address all communications and remittances to

THOMAS G. NEWMAN & SON,
974 West Madison St. CHICAGO, ILL.

ADVERTISING RATES.—The *Bee-Keepers' Magazine* charges 50c. per line, and *Gleanings* 30c. per line; but the AMERICAN BEE JOURNAL, acknowledged by all to be the best advertis ng medium in the world for bee-keepers, charges only 20c. per line. Having doubled the number of our readers this year, we shall not continue our old rates where the advertisement goes in more than once—but will hereafter charge 20 cents per line for each insertion. All will please to "take due notice and govern themselves accordingly."

TO CORRESPONDENTS.

When changing a post-office address, mention the *old* address as well as the new one.

We send the JOURNAL until an order for discontinuance is received and all arrearages are paid.

We do not send goods by C. O. D., unless sufficient money is sent with the order to pay express charges both ways.

When ordering Extractors, give outside dimensions of frame or frames to be used, length of top-bar, width and depth of frame just under top-bar.

In consequence of the dearth of small currency in the country, we will receive either one, two or three cent stamps, for anything desired from this office.

Strangers wishing to visit our office and Museum of Implements for the Apiary, should take the Madison street-cars (going west). They pass our door.

Additions can be made to clubs at any time at the same rate. Specimen copies, Posters, and Illustrated Price List sent free upon application, for canvassing.

Remit by post-office money-order, registered letter or bank-draft, payable to Thomas G. Newman & Son, so that if the remittance be lost it can be recovered.

We will send a tested Italian Queen to any one sending us four subscribers to THE AMERICAN BEE JOURNAL with $8.00. Premium Queens will in every case be tested, but not sent till after July 1st.

Write name and post-office address plainly. If there is no express office at your post-office address, be sure to give your nearest express office when ordering anything by express. Give plain directions how goods are to be sent.

Seeds or samples of merchandise can be mailed for one cent per ounce. Printed matter one cent for every two ounces. These must be tied up; if pasted, they are subject to letter postage. *Don't send small packages by express, that can just as well be sent by mail.*

For the convenience of bee-keepers, we have made arragements to supply, at the lowest market prices, Imported or tested Italian Queens, Full Colonies, Hives, Extractors and anything required about the Apiary. Our Illustrated Catalogue and Price List will be sent free, on application.

We have gotten up a "Constitution and By-Laws," suitable for local Associations, which we can supply, with the name and location of any society printed, at $2 per hundred copies, postpaid. If less than 100 are ordered, they will have a blank left for writing in the name of the Association, etc. Sample copy will be sent for a three-cent postage stamp.

Prof. Cook's New Work.

Within 20 days after this work was issued from the press, 600 copies were disposed of—a sale unprecedented in bee literature.—We subjoin a few of the many notices the Press has been pleased to give it:

MANUAL OF THE APIARY, by A. J Cook, Professor of Entomology in the Michigan State Agricultural College. Second edition, revised, enlarged, mostly re-written, and copiously illustrated. Published by T. G. Newman & Son, Chicago, Ill. Among the numerous works on apiculture, we know of none so valuable to every practical apiarist as this handsome volume of 286 pages.—Every point connected with the subject on which it treats, is handled in a clear, exhaustive, yet pithy and entirely practical manner. As we consider the work well worthy of a more extended notice in a later issue, we shall merely remark here that it should be in the hands of every apiarist who is seeking success by availing himself of the latest and best information on his business.—*Rural New Yorker.*

It contains upward of 300 pages, has over 200 illustrations, and is the most thorough work on the apiary ever published. It is the only book which illustrates the various bee plants.—*Lansing* (Mich.) *Republican.*

We are in possession of a copy of the "Manual of the Apiary," by Prof. A. J. Cook, of the Michigan Agricultural College, and it is a work of such rare merit that we want to tell our bee-keeping friends something about it. Prof. Cook is an entomologist, a botanist, a ready writer, a passionate lover of the honey bee, and his new work savors of all these qualities which are essential to the writing of such a treatise on bee-culture as the public demands. We experienced great pleasure in reading the invaluable works of Quinby, Langstroth, and King of our own country, but since these works were published, new discoveries have come to light, new methods have come into practice, valuable inventions have been made, and they fail to meet the present wants of the successful apiarist.—This new manual, however, fills these wants and will be prized by the friends of the bee—not only the practical bee-keeper, but its contents are such as to be read with pleasure by every one in any way interested in the little honey-gatherer. The anatomy and physiology of the bee, its wonderful habits and peculiarities, are fully described; descriptions of new utensils and modern methods of managing the apiary are given, and a more complete statement regarding honey plants is made than was ever before given by any writer. The illustrations are numerous and well executed, the type is clear, the paper is of good texture, and the binding is well done, all of which reflects much credit on the publishers, Thomas G. Newman & Son, Chicago, Ill., who are the publishers of the AMERICAN BEE JOURNAL. No person can afford to keep bees without a copy, which will be mailed by the publishers on receipt of $1.25 for cloth, and $1.00 for paper covers.—*Daily Standard*, New Bedford, Mass.

After some preliminary remarks of a general character, the first subject treated is the natural history of the honey bee, including its varieties, its anatomy and physiology, and the origin and function of its products—with 28 elegant engravings. Then follows the care and management of the apiary, covering its location, structure of hives, boxes and frames, the transference of swarms, feeding and feeders, queen rearing, increase of colonies, Italianizing, honey extracting, bee-handling, marketing honey, honey plants, wintering bees, &c., &c.—with 82 engravings. A careful and minute index affords easy reference to any point on which information may be desired.

The whole constitutes the latest, as it is also in many respects the fullest, most practical, and most satisfactory treatise on the subject now before the public, and we do not doubt it will meet with a large sale.—*Country Gentleman.*

Thomas G. Newan & Son, publishers of the AMERICAN BEE JOURNAL, in this city, have issued a new and enlarged edition of the "Manual of the Apiary," by A. J. Cook, Professor of Entomology in the Michigan State Agricultural College. The first edition was given to the public less than two years ago, and soon achieved an unexpected popularity. With this encouragement the author was induced to largely re-write and revise the work before issuing a second edition. Taking up first, the natural history of the honey bee, he discusses its entomological characteristics, its anatomy and physiology, its natural methods of increase, and its products. Part II. is devoted to the care and management of domesticated bees. Individual experiences and apiarian writers have been laid under contribution to furnish suggestions and intelligence, and eminent apiarists and scientific journalists have expressed their approval of the book. The present edition contains the latest developments of science and the most recent improvements connected with bee-culture and honey-production, and is copiously illustrated.—*Chicago Evening Journal.*

A second edition of at least 2,000 copies, added to the first edition of 3,000 copies, means that there is an active demand for this manual by the apiarists of the country. We cannot help thinking that this is the most complete and practical treatise on the culture in Europe or America. Its 110 beautiful illustrations could not have cost, in engraving, less than $400, and its attractive letter-press and general make-up will win lots of friends for the art upon which it so graphically treats. There are 20 chapters, besides an introduction. The introduction is lively and shows who may keep bees, the inducement to bee-keeping, its recreation and profit, its adaptation to women, its delicious food for both mind and body.

Part I., Chapter I., treats on the natural history of the honey bee, its place in the animal kingdom, the class and order, entomological, the family genus and species of the queen bee, the varieties—such as the German, the Italian, etc. Then, in Chapter II., we have the anatomy and physiology, the organs, the transformations, the three kinds of bees in each colony, as the queen, the drone and the neuters or workers.

Chapter III. treats of swarming, or increase, and Chapter IV. of the product of bees, as honey, wax and pollen or bee bread.

In Part II. we come to the practical work of the apiary, its care and management, the hives and boxes, the position and arrangement, how to transfer bees, how to feed them and how much to feed, queen rearing, how to handle bees, how to market honey, the best honey plants—as April plants, May plants, June and July plants, wintering bees, the enemies of bees, and work for each calendar month. The arrangement is successive, and every topic is lucidly treated in the Professor's blithesome, light-hearted, pithy, suggestive style. The complete, elaborate index is not the least important and valuable part of the book. The author will send this popular bee book in cloth to any one who will remit him $1.25; in paper for $1, postpaid. This book, and we like it all the better for it, is a Michigan product. The author was a Shiawassee county boy, a graduate and now a professor of the Agricultural College; and this book, wherever it goes, at home or abroad, will not disgrace the State, the College, or the author.—*Post and Tribune*, Detroit, Mich.

This handsome little volume of Professor Cook has met with large favor from the lovers of apiarian studies. The first edition of 3,000 copies, published two years ago, has been exhausted, and a general wish and want has induced a careful revision of the book, with many additions and illustrations. It is both a practical and scientific discussion, and nothing that could interest the bee-raiser is left unsaid. It is a book of 286 pages, well illustrated, and very neatly printed on clear white paper.—*Chicago Daily Inter-Ocean.*

MANUAL OF THE APIARY.—The large class of apiarists in the United States will find much valuable information in this work, from the pen of Prof. A. J. Cook, Professor of Entomology in the Michigan State Agricultural College. It is not necessary here to go over the ground of the volume's contents, for they are already well and favorably known by bee culturists. This is the second edition. When it is stated that more than 2,000 copies of the first edition of 3,000 were sold in one year, the popularity of the book may be readily understood without further comment. But at the same time it is *apropos* to state that the present edition is greatly enlarged, mostly re-written, even more fully illustrated, and contains the latest scientific discoveries of the most recent improvements in methods of apiarian management and bee-keeping apparatus. The writer says he recommends nothing that he has not proved valuable by actual trial unless he gives some eminent person for authority for advising it. The volume is published by Thomas G. Newman & Son, publishers of the AMERICAN BEE JOURNAL, No. 974 West Madison Street, Chicago.—*Prairie Farmer*, Chicago.

MANUAL OF THE APIARY, by Prof. A. J. Cook, revised, enlarged, mostly re-written and illustrated, has been issued from the press of Thos. G. Newman & Son, of the AMERICAN BEE JOURNAL, Chicago. It needs no recommendation, for it recommends itself.—*Western Rural*, Chicago.

Bingham's Smoker Corner

Will contain a short card from some one every month. See Bellows Smoker card on another page.
T. F. BINGHAM.

Lincoln, Mo., June 9, 1878.

"Our bees commenced swarming in May, and still continue. We have divided some. We now have 92 colonies. Bingham's Smoker came to hand last Saturday. We are all well pleased with it. We can now send the smoke where we want to, if the wind is blowing. Sometimes we found it very difficult to direct the smoke in the entrance of a hive with a rag smoker, but Bingham's Smoker cures that fault, and we are happy. Our eyes are no longer red from smoke. Thanks to you and the ingenious inventor."
Yours, MRS. J. W. DICK.

Clockville, N. Y., June 11, 1878.

"Received smoker all right. I cannot praise it enough; it is all the inventor claims for it, and twice as much. It works better than the Quinby or any other smoker that I have seen, and I would not trade it for two common smokers. It is a first-class instrument. W. V. BOSWORTH, JR.

Logansport, Ind., May 30, 1878.

"The Bingham smoker came to hand in due time, but out of shape from rough handling in the mail bags, but was easily righted up. It is all I expected, and more. I do not see how I did without it so long. I have no hesitation in recommending it to all bee-keepers." M. MAHIN.

Kenton, Tenn., June 11, 1878.

"The Bingham Smoker came to hand all right, and I have given it a fair trial. It is far better than the Quinby, which I have been using. It will remain trimmed and ready for use much longer than the Quinby—the Quinby goes out quickly. It is more durable, and I think I will send you some more orders for it soon." J. W. HOWELL.

Elizabethtown, Ind., June 15, 1878.

"I have just purchased a smoker (one of Bingham's extra large size), and to say that I am pleased with it does not half tell it. There may be other makes and styles as good, but I can't see how they could be *better*. To start the thing, put a few coals of fire in the tube, sprinkle on a little dry sawdust, then chips, and fill up with anything lying about loose. Talk about smoke! It could almost smoke out a whole camp-meeting. But the best thing about it is, that it does not go out, like the old style Quinby Smoker. I have often laid this one down on its side, while eating dinner (about an hour), and when ready to commence work again, it is ready for business. My advice to those about to buy a smoker is, to get the largest size; it costs more, to be sure, but it will give you satisfaction every time. You can throw away your bee-veils, or keep them for your visitors. *You* will not need them, as you need have no fears of stings, even from the crossest hybrids." JOS. M. BROOKS.

Prof. Cook, in his new "Manual of the Apiary," speaking of the Bingham Smoker, says;

"This smoker not only meets all the requirements, which are wanting in the old Quinby smoker, but shows by its whole construction, that it has not only as a whole, but in every part, been subject to the severest test, and the closest thought and study.

"At first sight this seems an improved copy of Mr. Quinby's smoker, and so I first thought, though I only saw it in Mr. Bingham's hand at a Convention. I have since used it, examined it in every part, and have to say that it is not a Quinby smoker. The bellows, the valve, the cut-off, and even the form are all peculiar The special point to be commended, and I suppose, the only one patentable, is the cut-off between the bellows and fire-tube, so that the fire seldom goes out, while even hard-wood, as suggested by the inventor, forms an excellent and ever-ready fuel. The valve for the entrance of air to the bellows, permits rapid work, the spring is of the best clock-spring material, the leather perfect, not split sheepskin, while the whole construction of the bellows, and the plan of the fire-screen and cut-off draft, show much thought and ingenuity. I am thus full in this description, that I may not only benefit my readers, all of whom will want a smoker, but also out of gratitude to Mr. Bingham, who has conferred such a benefit on American apiarists. There are three sizes, which may be bought for $1.25, $1.60 and $2.00, respectively, including postage.

"Mr. Bingham, to protect himself, and preserve the quality of his invention, has procured a patent. This, providing he has only patented his own invention, is certainly his right, which I think honesty requires us all to respect. Like Mr. Langstroth, he has given us a valuable instrument; unlike Mr. Langstroth, he should be granted a reward for his gift."

New Quinby Smoker Column.

It is but just to call the attention of bee-keepers to the fact that those who compare the Quinby with the Bingham Smoker, refer to the last year's Smoker, and not the better one I am selling the present season.
L. C. ROOT.

Lansing, Mich., June 6, 1878.
I have now tried the New Quinby Smoker, side by side with the Bingham, and see no essential difference in their merits, which is great praise for either one. I wish I could have tried yours before I sent out last proof-sheets of book; I should have said as much as the above in your favor, and will in the revised edition. I congratulate you, and bee-keepers, too, on your advance, A. J. COOK.

Cherry Valley, N. Y., May 5, 1878.
L. C. ROOT, ESQ.—*Dear Sir:* Your improved Smoker received and tested. I consider it the most complete one in the market. I bought eight of Mr. Bingham last winter, but had you then been manufacturing the perfect Smoker you now offer the public, I should certainly have purchased of you.
J. E. HETHERINGTON.

Borodino, N. Y., May 6, 1878.
I pronounce it decidedly the best *bellows* Smoker made. * * * G. M. DOOLITTLE.

Starkville, N. Y., May 1, 1878.
In excellence of workmanship and material, it far surpasses any other Smoker I have ever examined.
P. H. ELWOOD.

Canajoharie, N. Y., May, 1878.
We are glad to announce, however, that Mr. L. C. Root has improved his Smoker so much that it is decidedly better than any other Smoker.
J. H. NELLIS.

White Plains, N. Y., June 3, 1878.
I found it better than the Bingham, which up to this time is the best I had seen. C. J. QUINBY.

East Saginaw, Mich., June 16, 1878.
You have got up a *good Smoker*. It is a little heavy, but I think that is an advantage, as it will stand up better when you are not using it. I am pleased with the way it is made, and it will last for years with almost any kind of use. O. J. HETHERINGTON.

THE BEST YET.—T. B. Peterson & Brothers, Philadelphia, Pa., are now publishing a new edition of Charles Dickens' novels, which for beauty and cheapness far surpasses any ever before issued. It is called "Petersons' American Edition," printed on fine white paper, from large, clear type, leaded, with some original illustrations as selected by Mr. Dickens and designed by Phiz, Cruikshank, Browne, Maclise and other artists, and bound very gorgeously in red vellum, gold and black, with the cover filled with the author's principal characters, which he has made so world famous. There in one corner is the immortal Pickwick, in another the well known Micawber, the learned Capt. Cuttle, poor little Oliver Twist, the misguided Grandfather, the mean, hypocritical Pecksniff, the mercenary Squeers, Boots, the Beadle, etc., and all of this for the small sum of $1.25. This edition will be found for sale at all book-stores, news stands, and on all railroad trains, or any person sending the publishers $12.00, will receive the first twelve volumes as fast as published, by mail, postage paid, and at this low price every one that is fond of a handsome book ought to subscribe. Address all orders to T. B. Peterson & Brothers, No. 306 Chestnut Street, Philadelphia, Pa.

"MADAME POMPADOUR'S GARTER," is the name of a new, thrilling and historical romance of the reign of Louis the Fifteenth, by Gabrielle De St. Andre, now in press and to be published in a few days by T. B. Peterson & Brothers, Philadelphia. It is a romance of the days of Madame Pompadour, is a story of love, intrigue and facts, and will no doubt prove to be one of the most popular and successful novels that have appeared in print for years, for its pages will be courted and perused by all that are fond of a thoroughly good novel, for its great and absorbing interest. It will be issued in uniform style and price with "Theo," "Kathleen," "Gabrielle," and "Crespigny," published by the same firm.

HENRY GREVILLE'S NEW BOOK, "*Gabrielle; or the House of Maureze*," is in press and will be published in a few days by T. B. Peterson & Brothers, Philadelphia. It is a story of the time of Louis XIV., full, too, of all the splendor of its court, is well told, being pure, fresh, startling and historically true, and is most beautifully translated from the French of Henry Greville, and will prove a treat to all lovers of an exciting, absorbing and sensational novel. It will be issued in uniform style and price with "Theo," "Kathleen," and "Miss Crespigny," published by the same firm.